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A Sketch of the Improvement of Medical and Surgical Science in the United States, during the last thirty years. By the Editor.

A RETROSPECT of the improvements in medical science, in our own country, during the last thirty years, cannot, it is presumed, be considered uninteresting. To look back occasionally, on the scene over which we have passed—to contemplate the progress we have made—is indeed not only interesting, but highly useful.

In such a retrospect, however, we cannot hope, always, to trace with precision the silent and gradually progressive steps of scientific improvement; for conspicuous facts and remarkable discoveries are not the only sources from which improvement in science derives its impulse. With the gradual, but imperceptible progress of the human mind towards perfection,

VOL. II.—3 Q

science moves slowly forward in the path of improvement, without our being able to point out, with definiteness, whence its momentum is derived. Facts and observations, also, scarcely appreciable in their separate and isolated state, acquire importance, and become obvious in their influence, only when, in process of time, they are brought into association and comparison with others. Nor can we pretend always to indicate with clearness the full value of what may be deemed the more important facts or discoveries; for, although we may see the bright lights occasionally set up in the dominions of our science, yet we cannot follow those infinite irradiations which they send into the obscurities of nature, and which contribute, though almost insensibly, to develope her secrets.

Such are the general difficulties naturally connected with our task. But there are also others to be encountered, of a peculiar character, in giving an account of the improvements of American science. For such is the constant intercourse between this country and Europe—so rapidly is the light of improvement reflected from one country to the other—and so readily are the sparks elicited in the one caught and nursed into light in the other, that it is often extremely difficult, and sometimes impossible, to say, with positive assurance, to which the credit of original improvement belongs.

Medicine has been cultivated with much zeal and success in America, within the period of our retrospect. A free, active, and enterprising spirit of inquiry, and an independence of the doctrines and authorities of European writers, characterizes, in an especial manner, the medical mind of our country. "This hemisphere," it has been truly said, "is the theatre, on which the prejudices and errors of the European schools, in a great variety of instances, have been refuted and abandoned, and on which new principles in medicine have been proposed, ascertained, and completely established."

In noticing the progress of medical improvement in the United States, our view is necessarily directed, principally, to the University of Pennsylvania. For this institution may

with propriety be denominated the *punctum saliens* of medical science in America. It is to the free and independent spirit of inquiry, which some of its eminent teachers have manifested, in the pursuit of medical science, as well as to the equally bold and unrestrained spirit of investigation, which for many years characterized the pupils of this institution, that we are to look for almost every thing that is valuable in the improvement of American medicine.

Previous to about the year 1790, the doctrines and principles generally entertained by our physicians were European. The systems of Boerhaave and Cullen were almost universally adopted amongst us. In the remediate treatment of diseases, however, American physicians, although entertaining the pathological sentiments of European writers, early found themselves obliged to strike out new plans of cure, or to pursue the modes of treatment proposed in the books, with a boldness and energy corresponding with the more rude and vigorous features of our native diseases.

Dr. Rush was the first physician who promulgated an *American* system of medicine. This system, which was at once bold, plausible, and novel in its views, forms an important epoch in American medicine. It gave a national character to the medical science of our country. "It rejects," to use its author's own words, "the nosological arrangement of diseases, and places all its numerous forms in morbid excitement, induced by irritants acting upon previous debility. It rejects, likewise, all prescriptions for the names of diseases, and by directing their applications wholly to the forming and fluctuating state of diseases, and the system, derives from a few active medicines all the advantages which have been in vain expected from the numerous articles which compose European treatises upon the *materia medica*."

Whatever we may now think of this system, in all its parts, it cannot be denied that it embraces many important and profound views, which, before its promulgation, were but dimly seen, or altogether unknown. By it, we have been taught a

more just and simple doctrine concerning the radical and general relation of diseases, as well as a more rational estimate of the importance of nosological arrangements. That the doctrines and opinions taught by this illustrious benefactor of our science have descended with him into the tomb—that they are the mere meteor lights of fancy, which have passed away with the mind from which they flashed, few we presume will allow, notwithstanding the sentence of oblivion pronounced against them by his biographer, Dr. Caldwell.

Among the most important improvements which have been introduced into medicine in America, may be reckoned the more accurate and rational views entertained at the present day, concerning the origin and causes of epidemic disease, as well as a more correct estimation of the effects and value of quarantine regulations.

Drs. Rush,* Miller, Physick, Caldwell, Mitchell, and Pascalis, deserve to be particularly noticed, for having improved our notions concerning these subjects. The two former, especially, have thrown much light on the origin and character of the yellow fever of this country, and of epidemic and pestilential dis-

* “ In the *Dictionnaire des Sciences Medicales*, tome xv. page 546, in the article, “ *Fievre Jaune, est elle contagieuse ?*” written by Fournier and Vaidy, we meet with the following extraordinary paragraph: ‘ *B. Rush avait d’abord cru que la maladie etait contagieuse : il a soutenu, depuis 1802, une opinion contraire. Mais ce medecin a déclaré, en mourant, qu’il avait en cela cédé à des considérations particulières, et qu’il n’a jamais cessé de croire que la fièvre jaune est contagieuse. Il a désavoué à son heure suprême, tout ce qu’il avait écrit en faveur de la non-contagion. Nous tenons cette anecdote de témoins dignes de foi, parmi lesquels il suffit de nommer M. Moreau de Saint Méry.*’—‘ B. Rush believed at first that this disease is contagious. Since the year 1802 he advocated a contrary opinion. But he declared on his death-bed that he did so from private considerations, and that he had never ceased to believe in the contagiousness of yellow fever. He disavowed, in his last moments, all that he had ever written in favour of non-contagion. We derive this anecdote from undoubted testimony, amongst whom it is sufficient to mention M. Moreau Saint Méry.’ *Credat Judeus!* This scandalous and ridiculous falsehood needs no formal refutation. Here in America we know it to be untrue, the testimony of M. de St. Méry to the contrary notwithstanding.

eases in general. The monster contagion was in this country divested of his terrifying aspect, and his powers shown to be less dangerous and universal, than they were at one time supposed to be.

Besides the improvement of our knowledge concerning the general character of diseases, and their intimate relations, many important diseases separately considered have been more thoroughly investigated, and their nature and treatment more correctly ascertained.

The nature and treatment of dropsical complaints, are, at present, much better understood than they were formerly. Dr. Rush has the merit of having first advanced correct views and principles concerning the pathology, and treatment of these diseases. He removed them from the class cachexia, and placed them, very justly, with febrile diseases. He showed by a train of incontrovertible argument, that dropsy is a disease attended by morbid excitement. and preternatural action of the arterial system. This view of hydropic diseases, deserves to be regarded as forming a very important improvement in modern pathology. The mode of treatment deducible from it, is at once more rational and successful, and the sentiments as well as the practice of our illustrious countryman, in relation to this disease, are daily becoming more prevalent, both in Europe and in America.—It may be remarked, however, that while these improved views are becoming more common in Europe, the sources, whence they are immediately derived, are not duly recognised. Dr. Abercrombie* of Edinburgh, in an essay on the use of blood-letting in certain dropsical affections, proposes to prove, what no American physican doubts, "that dropsy is often found existing in a state of the body directly the reverse of exhaustion, and even in immediate connection with systems of an inflammatory nature;" in other words, he sets out to prove, what Dr. Rush had long before proved much more ably, that dropsy is a disease, generally, if not uni-

* Edinburgh Medical and Surgical Journal, No. 55, 1818.

versally, attended with "*morbid excitement and preternatural action of the arterial system.*" The name of Rush is not once mentioned by Dr. Abercrombie, notwithstanding the pains he seems to have taken, in hunting up isolated facts and authorities, among the older writers, in support of the sentiments he delivers. In a review of Dr. Parry's elements of pathology, in the 58th number of the same journal, the credit of removing dropsy from the class cachexia, is given to Dr. Blackall, without referring to Rush, to whom alone, this credit, rightfully, belongs—"We regard it, says the reviewer," as no mean triumph of modern pathology, that dropsy is removed from the class cachexia, that it is no longer considered, as the product of depraved solids, but a disorder of the sanguiferous system. The researches of Dr. Blackall, a few years ago, and resistance of albumen in the urine in many cases of idiopathic dropsy, have opened the minds of the profession to a belief of its general alliance to inflammation." The instances, however, of European writers, availing themselves, without due acknowledgments, of the suggestions and improvements of American physicans, are by no means few. We shall have occasion to notice several glaring ones, in the course of this paper. The following is another example: "I have not used," says Dr. Duncan, in an account of the late epidemic fever in Ireland, "Cullen's distinctions of synochus and typhus, because, I do not believe that the distinction exists in nature. I have preferred distinguishing the cases by the epithets, *cephalic, pulmonic, gastric, enteritic, hepatic, &c.* from the principal organs affected." This nomenclature was long ago proposed and adopted by Dr. Rush. Dr. Duncan does not give him credit for it. Whether things of this kind proceed from an ignorance of American books, or from want of candour,—whether from a desire to undervalue American genius, or from the still more censurable disposition of appropriating to themselves the discoveries of others, it is, perhaps, immaterial to inquire into, since, on either hand, such proceedings can, in no way redound to the credit of their authors.

Among the late general improvements of medical science, effected principally in this country, may be mentioned a more simple and efficacious treatment of pestilential diseases, and a more discriminating, rational and decisive employment of the remediate articles, and especially of blood-letting in febrile diseases.

Mania a potu, has lately been treated in a new and successful manner with emetics, by Dr. Jos. Klapp. From an experience sufficiently extensive, to warrant a comparative estimate, we cannot doubt of the superior efficacy of this mode of treatment. The usefulness of emetics in mania a potu, would seem to go considerably towards confirming the correctness of the gastric pathology of certain mental and cephalic diseases, a pathology which has of late gained much ground in Europe, and in some degree, in our own country. That the primary irritation of this class of disorders does often consist in *functional* or organic derangement of the chylopoietic viscera, there can be no doubt. In this country, these pathological views, are perhaps too much neglected. Dr. Chapman, however, with an enlightened discrimination has given due weight to the gastric pathology of mental and cephalic diseases, and has contributed much to the dissemination of these sentiments amongst us.

The successful application of the tincture of guaiacum in dysmenorrhœa, as recommended and practised by Dr. Dewees, deserves to be noticed among the improvements of practical medicine. By the use of this remedy, the membrane, formed on the internal surface of the uterus in this disorder, and which causes difficult and painful menstruation, as well as sterility in the married woman, is expelled, and its subsequent formation prevented, and the pain and barrenness which arose from its presence obviated.

Surgery has received numerous and important improvements in the United States. It is practised here, perhaps in a more perfect state, than in any other country. "The American surgeon," says Dr. Dorsey, "is, or ought to be strictly

impartial, and therefore adopts from all nations their respective improvements." Whilst the value of the doctrines of adhesion, are fully understood with us, which is not the case with the French, the improvements of French surgery, neglected by the English, receive here an equal attention.

Dr. Physick has contributed largely to the improvement of surgery. Indeed there are few subjects in this department of the healing art, that have not received some favourable modification from him. What has been said of the poet, may with the utmost propriety be repeated of this gentleman, in relation to surgery, *nihil tetigit quod non ornavit*.

In the modification and invention of surgical instruments, many valuable improvements have been made in America. Dr. Physick's improvement on the gorget is important. It consists in having the beak and blade formed of two separate pieces, and so constructed as to be readily and firmly united. By this contrivance the blade may be separated from the beak, and a perfectly keen edge given to that part of it which commences the incision, an advantage which cannot be gained when the beak and blade are inseparable. This is obviously an improvement of much value. For a particular description, see Dorsey's Surgery, vol. ii. page 175.

The French mode of treating fractures has been generally adopted in this country, so far, at least, as relates to the use of permanent extension and counter-extension, for the purpose of keeping the extremities of the fractured bone in opposition. Important modifications, however, in the modes of keeping up extension and counter-extension in fractures, have been made in America.

The long splint of Desault, used in fractures of the thigh, has received a useful modification from Dr. Physick. The improvement consists in increasing the length of the splint, so that the counter-extension is more in the direction of the thigh.

In oblique fractures of the leg, a very convenient and effectual mode of applying permanent extension was contrived by

the late Dr. James Hutchinson. This is an improvement of much value in the treatment of fractures of the leg. For a particular description of this splint, and its mode of application, see Dorsey's Elements of Surgery, vol. i. p. 178.

An apparatus for applying permanent extension and counter-extension, in fracture of the thigh, has also been invented by Dr. Hartshorne. By this contrivance, the extension and counter-extension are made by a splint placed on the inside of the leg, reaching from the perineum to about six inches below the foot. The upper extremity is cut out like the top-piece of a crutch, which is lined and stuffed with hair. This part, resting upon the perineum and ischium, serves as a support to the counter-extending force. The lower extremity does not differ from that of Hutchinson's splint.*

The angular splints, used by Dr. Physick in fracture of the os humeri, at or near the condyles, to prevent a deformity which is extremely apt to occur in these cases, is also an improvement deserving notice. Dr. Physick has ascertained that the same advantage may be more certainly obtained, by keeping the patient in bed, "with the arm flexed at the elbow, and lying on its outside with the rectangular splints supported by a pillow."†

Surgeons have complained of the difficulty of turning a needle, when introduced into deep and narrow wounds for the purpose of taking up deep seated arteries. To obviate this difficulty, Dr. Physick has introduced the use of an instrument which completely answers the purpose. It consists in a curved forceps, by which the needle is held, and thus rendered perfectly manageable. Heister describes an instrument for holding needles in making sutures. Dr. Physick, however, was the first surgeon who proposed and used such an instrument, *for the purpose of taking up deep seated arteries*. In the Eclectic Repertory, a modification of this mode of holding the needle in taking up deep seated arteries, is described by Drs. Parish, Hewson, and Hartshorne. These

* Hartshorne's Translation of Boyer on the Bones, page 365.

† Dorsey's Elements of Surgery, vol. i. page 159.

gentlemen have forgotten to mention Dr. Physick as the *first* surgeon who used such an instrument for this purpose. Dr. Physick's improvement was made in 1800.

Blisters, when locally applied to a part in a state of mortification consequent to inflammation, will generally put an immediate stop to its progress. This very important remedy was introduced into practice by Dr. Physick. He first employed it in 1803. The blister should be large enough to cover all the sound parts in contact with the diseased. "I have witnessed its effects," says Dr. Dorsey, "in a variety of instances, and have no hesitation in recommending it in preference to all other local remedies. After the first dressing of the blister, it will generally be found that the mortification has ceased to progress, and in a short time the separation of the sloughs commence."

Dr. Physick's mode of treating artificial anus is unquestionably one of the finest improvements of modern surgery. This mode of treatment consists, in consolidating the sides of the intestines laterally, for a short distance below the artificial opening. To effect this union a ligature was passed by Dr. P. through the intestine, and suffered to remain a week, keeping its sides in close contact. A portion of this consolidated partition between the two extremities of the intestine was afterwards removed by a cutting instrument, the *fæces* thus regaining their natural route, the external aperture was healed up without difficulty. This important improvement is claimed in France by Dupuytren;* and in Germany, where it is spoken of as a most valuable improvement, it is also given to this surgeon. Dr. Physick, however, performed this operation in January, 1809, successfully, long before Dupuytren's case occurred.†

* Anzeige einer operations weise zur heilung des *anus artificialis*, nebst bemerkungen von Dr. Reisinger.

† Upon this subject, it gives us pleasure to be able to introduce the following letter from our friend, G. S. Pattison, Esq. late professor of anatomy, physiology, and surgery, in the Andersonian university, Glasgow.

"DEAR SIR,

Pine Street, Aug. 28, 1819.

"In compliance with your request, I now transmit you an account of the method adopted by M. Dupuytren of Paris, for the cure of artificial anus.

The application of blisters to the tract of an inflamed vein, is a practice of much value. This treatment was first introduced by Dr. Physick. "A small plaister of simple cerate, spread on linen, is to be applied on the orifice, and over this a blister is to be laid large enough to cover the whole inflamed

"In most cases of artificial anus, the superior and inferior portions of the wounded gut are connected with each other at the external wound: they, in fact, as it has been aptly said, lie along side of each other, like the tubes of a double-barrelled gun. The rationale of cure proceeds upon this their locality. "All that is required," says the French surgeon, "is to open a lateral communication between the different portions of the intestine; if this be done, it is evident that the feculent contents will pass with greater facility through that opening, and descend, *per vias naturales*, than overcome the stricture of the wound, and be discharged externally." The operation which this gentleman performs for the accomplishment of the cure, has two intentions. 1st. To make a direct opening of communication betwixt the superior and inferior portions of the intestine. 2dly. To guard against feculent effusions into the abdomen. It is performed by introducing separately into the different portions of the gut, the blades of forceps, which have a considerable resemblance in shape to those which are used for the extraction of bullets. So soon as these have been united at the hinge, and it has been ascertained by the finger that the blades grasp the inside of the intestines immediately interior to the external opening, they are pressed so forcibly together as to destroy the vitality of all the parts embraced betwixt them. The forceps are now withdrawn, and nature finishes the cure. The manner in which she accomplishes this will be easily understood. The pressure having destroyed the life of all the substance placed betwixt the blades of the forceps, it must necessarily be separated from the living parts: it must slough off: and as a certain degree of inflammation is required before this can happen, the parts surrounding, from their being covered with serous membrane, are glued together by coagulable lymph, and effusion prevented.

"With all other European surgeons, I believed, until my arrival in the United States, that this method of cure, which I consider one of the most philosophical and beautiful discoveries in modern surgery, was first introduced into practice by M. Dupuytren, of the Hotel Dieu. Indeed, I have in a work on the surgical anatomy of the trunk, which I have been for some time preparing for the press, so considered it, and given the due meed of praise to him, who I then considered its author. I have since learned to whom the discovery belongs, and I can assure you, that it will be a pleasing task for me to correct what I have written, and to publish an account of Dr. Physick's operation, which is essentially the same as the one performed by the French surgeon, and which, from its having been performed many years before in a public hospital, and continued to be taught session after session in a medical

part, extending three or four inches from the orifice in every direction."

In cases of retention of urine, it is often impossible to introduce a catheter, although a bougie may be introduced without difficulty. A case of this kind having occurred to Dr. Physick in 1796, he fastened the point of a bougie upon the extremity of an elastic catheter, and thus very readily passed the instrument, which he had previously attempted in vain. "For this purpose, a French catheter of the middle size is to be provided, and its point cut off, leaving a continued cylindrical canal through it. A piece of bougie plaister between two and three inches long is to be cut into a proper shape, forming a triangular piece, the base of which is about one inch and a quarter, and the height about three inches. When it is rolled up, as in making bougies, sufficiently to fill the cavity of the catheter, a slit half an inch long is to be made in its lower end, after which the part already rolled up is inserted into the catheter, and the other half is wrapped round its outer side, and fastened by tying a cambric thread neatly round it. In order to secure still more effectually the bougie point from slipping off, and to extract it, in case this accident should happen, a strong thread is passed through the bougie, and fastened to the outer extremity of the catheter."* This is very justly considered as one of the greatest improvements which the catheter has received in modern times.

In false joints from fracture, Dr. Physick has introduced the practice of passing a seton through the diameter of the limb, between the two fragments of the bone, in order to inflame their extremities, and thereby to produce a reunion of the fractured bone. There is some dispute relative to the origin of this important practical improvement. Boyer, Roux,

university, gives unquestionably all the honour of this great improvement in surgery to the HUNTER of America.

"I remain, dear sir, your's most truly,

"GRANVILLE SHARP PATTISON.

"TO. DR. EBERLE."

* Dorsey's Surgery, vol. ii. p. 162.

and a few other French authors, have by an ambiguous notice of this practice, conveyed, or evidently wished to convey, an impression that the merit of first introducing this improvement into surgery is due to Mr. Percy. Boyer and Roux, who quote from Laroche, state, that "Percy performed this operation two years before Dr. Physick's operation was *known* in France." This does not, however, prove, though it insinuates, that Percy was the first who performed this operation. For, to say that an operation was performed by one surgeon, two years before he *knew* that another surgeon had performed a similar operation, does certainly not establish the priority of invention to the former. Both Boyer and Roux, moreover, express themselves with so much ambiguity on this subject, as to render it evident, that they themselves did not view Percy as preferring a just claim to the merit of introducing this valuable improvement. "On pourroit, *peut-être*, réclamer," says Roux, "la priorité de l'invention en faveur de M. Percy." But Laroche, from whom Boyer and Roux take their account of this operation, gives the credit of first using it to Dr. Physick. He states, also, that Percy did not perform this operation with the express purpose of producing a reunion of the fractured extremities, but simply to facilitate the discharge of dead bone; and he adds, that having seen setons used after gun-shot fractures, to favour the escape of dead pieces of bone, he is astonished that he or his master never took the hint of applying this practice to the cure of artificial joints.

In cases of retention of urine from stricture, where every attempt to introduce a catheter fails, surgeons generally recommend puncturing the bladder. To avoid this formidable operation, Dr. Physick contrived an operation, which he has repeatedly performed with success. It consists in perforating the stricture by an instrument consisting of a curved canula, or catheter, concealing a lancet capable of being protruded when necessary. "The operation is to be performed, by introducing the instrument as far as it will go, and then the lancet is to be protruded. In some cases the obstruction is situated

beyond the bend of the urethra; and in these cases, in order to guard against all danger of wounding any other parts except those intended, the handle of the instrument is to be depressed as low as possible; and when it is pushed onward, it will be found to have divided the stricture, and urine will generally escape through the canula. The lancet is immediately to be retracted, and the urine evacuated. A catheter must afterwards be introduced, and left in the bladder until the new passage heals up. This very important operation has been repeatedly performed by Dr. Physick, and has never been followed by any unpleasant consequences.”*

Dr. Physick’s armed bistoury, for the operation of fistula in ano, is also an improvement of considerable value. “It combines, in a great measure, the advantages of the blunt and sharp pointed bistouries, and possesses some advantages over both.”†

In the reduction of dislocation of the thigh, Dr. Physick has also contrived a very effective mode of making extension and counter-extension. For a particular account of Dr. Physick’s mode of applying the extending and counter-extending forces in dislocations of the thigh, see Dorsey’s Surgery, vol. i. p. 260.

The use of copious bleeding, in facilitating the reduction of luxations, though originally proposed by Dr. A. Monroe, was first put into practice in our country by Dr. Physick. This eminent surgeon has also directed the attention of surgeons more particularly to making the counter-extension against the acromion process in the reduction of dislocations of the shoulder joint.

In consequence of having remarked that strips of adhesive plaister applied over ulcers were soon dissolved in the pus discharged from them, Dr. Physick suggested, many years ago, the use of animal ligatures, for the purpose of taking up arteries. “For as it is now sufficiently ascertained that all the pro-

* Dorsey’s Surgery, vol. ii. p. 163.

† Ibid, vol. ii. p. 188.

cesses requisite for the obliteration of a blood vessel secured by a ligature are completed in a very short space of time, probably in two or three days, it follows, that if the ligature applied be made of materials capable of securing the vessel during this space of time, and liable to decomposition and solution in the animal fluids afterwards," much advantage would be gained. Dr. Physick proposed the use of leather for this purpose; and in an experiment made in 1814, with a buckskin ligature, applied to the large artery of a horse, it was found to afford all the advantages for which it was suggested. "It restrained the bleeding, and was discharged in a liquid state in two or three days."

Dr. Physick's mode of treating *morbus coxarius* deserves to be mentioned in this place. He advises the application of a curved splint to the hip, in order to secure the perfect rest of young patients, which, without such a contrivance, it is almost impossible to do, and which is of the utmost importance in the cure of this disease. Active and long purging, together with a low diet, make up the rest of the treatment.

It has long been a question of much difficulty, with surgeons, why inflammations so readily take place in cavities that are laid open to the admission of the external air. Hunter ascribed it to the "*stimulus of imperfection.*" Abernethy, "to the frequent renewal and long continued application of air to a surface unaccustomed to it." And John Bell, "to the length of the incision, &c." This question received at last, a satisfactory solution by the late Dr. James Cocke of Maryland, in his inaugural dissertation published at Philadelphia, in 1804. This gentleman shewed, by a variety of well devised and satisfactory experiments," that the inflammation which supervenes on the surfaces of wounded cavities is *the consequence of the change and diminution of temperature caused by the admission of air into them.* That the vessels are first debilitated by the abstraction of their natural heat, and that they afterwards take on an increased action and inflame."*

* See Dorsey's Surgery, vol. i. page 91.

Dr. J. R. Barton has lately invented a very ingenious and valuable mode of bandaging the lower jaw, in the treatment of fractures and other injuries of this part. See 2d No. vol. ii. of this Journal.

For preventing or arresting the progress of whitlow, Dr. Perkin of Philadelphia has introduced an excellent remedy. It consists in making an eschar on the affected part by the early application of caustic.

In *midwifery*, many valuable improvements both theoretical and practical, have originated in this country. In cases of difficult parturition, depending on rigidity of the mouth of the uterus, Dr. Dewees has introduced a very important practice. He recommended many years ago, in such cases copious bleeding, *usque ad deliquium animi*, and experience abundantly proves the utility of this practice*. So important was this treatment considered by the late professor Shippen, that he publicly pronounced it, as forming an epoch in practical midwifery.

When, in pregnancy, the placenta is situated over the mouth of the uterus, much difficulty and danger from hæmorrhage usually attends for some time previous to, and during parturition. In cases of this kind, the common practice is to break through the placenta and to deliver the child by the feet. Dr. Dewees, has recommended, and used successfully, a mode of practice in such cases, which obviously possesses many advantages over the other methods commonly pursued. He directs the accoucheur to pass his hand up, between the placenta, membranes and the uterus to the top of this organ—there to rupture the membranes, and laying hold of the child's feet, to deliver it. The advantages of this mode of operating are first—Much less violence is done to the connection of the placenta with the uterus, and thereby the risk of increased hæmorrhage diminished. 2. Much time is saved. 3. We arrive at the feet, and can command their descent with much more

* An Essay on the means of lessening pain in certain cases of difficult parturition, by W. P. Dewees, 2d edition, 1819.

certainty. 4. We prevent an atony of the uterus by allowing the waters to escape gradually and at will. 5. It prevents the fœtus from being entangled in the placenta, and thus does away the inconvenience that would arise from the increase of bulk, as in the former method, the size of the placenta is added to that of the child. 6. It prevents the rude and sudden separation of the placenta from the uterus.

There is no accident more to be deprecated in obstetrical practice than *inversio uteri*. Reduction is frequently impracticable, and in this case death generally follows speedily. When the inversion is incomplete, so that part of the uterus remains within the neck, whilst the fundus projects through it in an inverted state, it becomes, strangulated, and its reduction is rendered impossible. In such cases, Dr. Dewees recommends, grasping the projecting tumour of the uterus firmly, and to bring it forwards, so as to complete the inversion. This operation he has practised with success and with almost immediate relief to the patient.* The uterus afterwards contracts to a small size, and may, if it becomes inconvenient, be removed by ligature, as lately practised with success by Mr. Newnham of England.

That pain is not only unavoidable, but essentially necessary in parturition, is a doctrine which had never been contested by any one, we believe, until Dr. Dewees brought forward, a contrary opinion, in an interesting paper, published in the 1st vol. of the Philadelphia Medical Museum. Lately, the same sentiments have been delivered by Dr. Power of England, in a book he has written on midwifery. This writer, though claiming to himself the merit of having developed new and important principles in midwifery, is entitled only to the minor praise of having *adopted* the sentiments of our countryman, Dr. Dewees.

Ergot has lately been introduced into *regular* practice by Dr. Stearns of Albany. We are aware that this article was

* See an Essay on the partial inversion of the uterus. By W. P. Dewees, in Coxe's Medical Museum, vol. vi. p. 21.

used in France and Germany more than a century ago. It was however not known in *regular* practice, until Dr. Stearns brought its virtues before the public; and to him, therefore, rightfully belongs, the merit of having first directed the attention of the medical public to the use of this valuable article in obstetrical practice.

In a country like ours, extending through every variety of soil and climate, nature, it is reasonable to suppose, has not neglected to bring forth many of her healing and balsamic plants. From the bosoms of our own forests, accordingly, have we already drawn, a great variety of remediate articles, of the greatest utility in the cure of diseases.

To no one are we more indebted for a knowledge of our indigenous *Materia Medica*, than to the late professor Barton. His zeal and industry in the cultivation of this department of medical science, his readiness to communicate to others the knowledge which he sedulously collected from every accessible source, concerning our Vegetable *Materia Medica*, and above all, the care which he constantly took, to direct the attention of the medical students of the University of Pennsylvania to the investigation of the virtues of our native plants, contributed in a remarkable manner to the increase of knowledge upon this subject.

To notice, in detail, all our native medicinal plants, would be swelling this part of our retrospect beyond all proper bounds. We may enumerate the following, as amongst the most valuable of our lately discovered medicinal plants.

Lobelia inflata, *heuchera Americana*, *rubus* *trivialis*, *sanguinaria canadensis*, *geranium maculatum*, *orabanche virginiana*, *podopyllum peltatum*, *asclepias tuberosa*, *daucus carota*, *prunus verticillatus*, *cornus florida*, *ulmus fulva*, *diospyros virginiana*, *zanthoxylum fraxineum*, *magnolia glauca*, *prunus serotina*, *liriodendron tulipefera*, *rhus typhinum*, *rhus radicans*, *phytolacca decandria*, *coptis trifoliata*, *frasera walteri*, *baptisia tinctoria*, *cunilla mariana*, *eupatorium perfoliata*, *zanthorrhiza apiifolia*, *hydrastis canadensis*, *convolvulus panduratus*, *comptonia asplenifolia*, *euphorbia ipecacuanha*, *spirea trifoliata*, *gaul-*

theria procumbens, triosteum perfoliatum, monarda punctata.*

The polygala seneca, though long known as a valuable article of the *Materia Medica*, has had its virtues more accurately ascertained, within the period of our view. Dr. Archer, of Maryland first noticed its excellent powers in the cure of cynanche trachealis, and Dr. Hartshorne first observed its emenagogue virtues.

Cantharides, also appear to possess very valuable emenagogue powers. For a full and accurate knowledge of the virtue of flies in promoting the menstrual discharge, we are indebted to Dr. Jos. Klapp. Several writers, we are aware, and amongst those Dr. Chapman in particular, have noticed these virtues of the flies, before Dr. Klapp's essay on this subject was published, but it does not appear that any one before him drew his conviction of their utility from actual and reiterated experience. See Dr. Klapp's Essay on Cantharides, in the 1st vol. of this journal.

Physiology has not advanced as rapidly in this country, as most of the other branches of medicine. Practical medicine chiefly, is the field in which the physicians of this country have particularly distinguished themselves. Physiology nevertheless, has been cultivated with much care, and has received several important improvements amongst us. The subject of cuticular absorption in particular has been investigated with much attention and success by Drs. Klapp and Rousseau. By the experiments of these gentlemen, it seems to be demonstrated that no absorption can ever take place, from the cuticular surface of the human body.

Dr. Mussey, however, performed a number of experiments, from which it would appear that madder does pass, through the external surface into the circulation; but whether the passage of this substance through the cuticular surface, was by absorption, or by percolation simply, is not as yet de-

* See Dr. Attbe's paper, on this plant, in the present number of our Journal.

terminated. Madder is certainly a very penetrating article. Substances, very little porous steeped in it, receive its colouring matter in so fixed a manner, as to make it almost impossible to remove it again. By bathing the body with it for some time, it creates a stinging and prickling pain in the skin. It is therefore very probable, that when madder does pass through the skin unto the circulation, it penetrates the cuticle mechanically, and coming in contact with the absorbents opening under the cuticle, is by them taken up and carried into the circulation.

Dr. Rush's theory of the spleen deserves, we think, to be ranked among the modern improvements in physiology. According to this theory, the spleen serves as an important preservative organ in the animal economy. It constitutes a waste gate or reservoir for the torrent of blood excited into action by violent and excessive agitation of the blood vessels, whereby the more tender and vital organs are protected from the too violent effects of this force, and from dangerous congestions.

Dr. James Johnson, in his valuable work on, *the influence of the atmosphere on the health and functions of the human frame*, says, "When the balance of the circulation is broken, and the blood is determined from the surface upon the internal parts" (as in the cold stage of fevers) "were it at all to accumulate in the large vessels about the heart, and in the lungs, immediate death would be the consequence; but the local abstraction of so large a proportion of blood from *actual circulation*, by its quiescence in the *spleen* and portal circle, (where plethora is not so immediately detrimental,) preserves the heart and lungs from being overpowered and suffocated, till reaction restores the equilibrium between the surface and the interior. *From this view of the affair, the utility of the Spleen, as an organ of preservation, is no longer doubtful.*"

It was for many ages believed, that the blood in certain diseases entered into putrefaction, or, at least, into its incipient stage. Hoffman and Cullen, first opposed this doctrine, and rendered it extremely probable, by reasoning from general

principles that this can never take place. What was thus rendered probable by reasoning upon the subject, Dr. Seybert demonstrated to be true, by a series of well directed and conclusive experiments.*

In anatomy, although cultivated with as much assiduity in this country as any other department of our science, we cannot boast of many discoveries. Anatomy is a field, in which the most patient and well directed inquiry can hope for little that is new. In Europe this science is cultivated with uncommon zeal, by men of the first grade of genius ; and yet how seldom do they add any thing of importance to our knowledge of the human structure ! After so many centuries of the most patient and acute examination of the human body, can it be wondered that so little, now, awaits the most prying researches of the anatomist ?

The late Professor Wistar, shortly before his death, communicated to the Philosophical Society a paper, in which he proves, that the “ generally received account of the formation of the sphenoidal sinuses is not strictly correct.” He describes two small bones which have heretofore been considered as processes of the sphenoid bone, but which he demonstrates to be distinct from it.†

Dr. M'Clellan of Philadelphia, has lately shewn, that “ the common idea respecting the extent of the pleura is incorrect. That they do not terminate at the first ribs, as is stated in all the books, but extend to some distance above them, and line the inner surface of the scalenü muscles.” Dr. M'L. has found the pleura to extend as high on each side as the thyroid cartilage. It is therefore obvious, that the pleura becomes involved, in all operations on the subclavian, and lower portion of the carotid arteries.

We have thus endeavoured to notice such improvements in medicine, as have been made during the last thirty years.

* An attempt to disprove the putrefaction of the blood in living animals, by Dr. A. Seybert.

† Philosophical Transactions, 1818.

We cannot pretend to have given all the improvements with which medical science has been enriched in America. We have however given all we had a knowledge of; and if we have omitted some facts, and thereby not rendered justice to all the successful cultivators of our science, let it be ascribed to any thing but a want of candour. *Suum cuique.*

On the Medicinal Properties of the Monarda Punctata. By
E. A. Atlee, M. D. of Philadelphia.

IN the wide field of medical science, there is ample room for all its votaries, and while the most aspiring genius expatiates freely over its domains, the humble and unassuming labours of the botanist may be pursued without interruption. In the delightful and useful investigation of the plants so luxuriantly spread over our favoured country, the lofty mind of a BARTON condescended to be engaged, and who will, therefore, deem it unimportant? His almost enthusiastic ardour in the pursuit of nature thus beauteously arrayed, has not only given a taste for similar studies to his successors, but, what more immediately concerns our profession, has added to the *Materia Medica* many of our native plants, which, but for him, might continue still to "waste their fragrance on the desert air."

The justly celebrated *Sydenham* was of opinion, that there was much less need of new remedies, than of a knowledge how best to apply such as were already known. With some limitation, the sentiment was probably correct; but had that bold son of nature been privileged to live in this new world, his original and enterprising mind would have enjoyed its congenial element: "the physical luxuriance," in the language of professor *Chapman*, "equalled only by the moral and intellectual energies of the people, and our diseases par-

taking of the same character, and having a violence which exacts for their cure either *new* means, or original combinations of vigorous practice," would have invited his "intellectual energies," and his adventurous hand, as if by *intuition*, would have plucked from the profusion around him, perhaps *specifics* for some of the diseases which yet remain as the opprobria of our art.

With a view of contributing my mite, I now take the liberty of introducing to the notice of my medical brethren, a plant not altogether a stranger in its neighbourhood, but in my opinion possessing *comeliness of form*, and *active virtues*, entitling it to more general regard. In the state of *New Jersey*, where it *dwells*, it is known by the name of HORSE MINT; but for a knowledge of its botanical character, I am indebted to *Zaccheus Collins*, of this city, who very kindly furnished me with it, as taken from *Wildenow*. It is by him denominated *MONARDA PUNCTATA*, and belongs to the second class and first order of *Linnaeus's* system, *Diandria Monogynia*; and to the *Labiatae* of *Jussieu's* natural families, and is thus described: "Floribus verticillatis, corollis punctatis, bracteis coloratis." *Wild. Spec. Plantar.*

Michaux has described it under the specific name *lutea*: "Foliis lanceolatis, leviter serratis, partim ciliatis, floribus verticillatis, alycibus summitate barbatis, corollis *luteis*." His apology for changing was, because the *other* species were punctate.

The *Monarda* grows from nine to eighteen inches in height, thrives most in sandy soil, and is abundant on the road leading to *Moore's-town*, and in old worn out fields. A rough drawing which I have taken from nature will give a pretty good idea of the plant.

The inhabitants of *Jersey* are not ignorant of its virtues, and some respectable practitioners in that state frequently direct it as a diaphoretic, diuretic, and carminative. These properties it possesses in a high degree, being a very warm aromatic. I know of no plant of equal pungency in its recent state; but the infusion loses much of it, and bears a resemblance in taste and flavour to the balm or dittany. Much of

this useful plant is now brought to our market, and made use of in cholic and gravel with considerable advantage.

By distillation, it yields a volatile oil, of an amber colour, approaching to red, which, if exposed to a greater degree of heat, leaves a beautiful straw coloured *camphor*, a fine specimen of which may be seen at the drug store of G. Glentworth, N. E. corner of Race and Chester street.

It is the *volatile* or *essential oil* which I am about to recommend to the notice of physicians, and with this view give a brief statement of what I know of it.

Some time in 1810, while engaged in the drug business, a quantity of horse-mint oil was brought to my store, by the original distiller, *Bethuel Borton*, who lives near Morris-town. By his recommendation I was induced to purchase some, and from its sensible qualities was persuaded that it must rank among the most powerful irritants with which I was acquainted. The smallest drop immediately diffused a pungent aromatic heat over the tongue and fauces, which remained a considerable time, and when applied to the back of the hand, excited redness, heat, pain, and vesication.

Being desirous to submit it to the test of experiment, and having a patient labouring under *chronic rheumatism*, I combined some of the oil with four times its proportion of spirit of wine, with which I ordered the pained limbs to be rubbed night and morning, and had the satisfaction to witness an encouraging effect.

Some time afterwards I was called to visit a patient in *mania a potu*, whom I found so furious, as to require the strength of three or four men to keep him in bed. I ordered large doses of opium and calomel, and instead of a blister of *cantharides* to the back of the neck, which it was impossible to apply, I used the *undiluted* oil, not only to the neck, but over the scalp, which completely *vesicated* the former. The result was very favourable, the patient rested well during the night, and on the following morning was perfectly sane.

My eldest daughter had for some months been subject to a *hardness of hearing*, approaching nearly to deafness, and I

resolved, by and with the advice and consent of my wife, to try the effect of this new medicine on her. She had gone to bed, and was soundly asleep. We carefully took off her cap, and rubbed her head all over with the oil in its undiluted state.

The poor girl awoke after ten or fifteen minutes, crying out with the burning pain occasioned by the remedy, and was with difficulty pacified: but the effect exceeded our expectations, for when she came down stairs next morning, we had the pleasure to find her hearing *perfectly restored*, and it continues unimpaired from that time, now nearly nine years.

A young woman who kept house for a respectable book-binder of this city, had for several years laboured under periodical pain of the head, resisting various means of relief. I directed for her the following liniment, the recipe for which, varied a little according to circumstances, is what I generally prescribe, where rubifacients or more powerful irritants are indicated.

R. Ol. Monard. Punctat. ℥ss.
Tinct. Camphor ℥ij.
Tinct. Opii ℥ij. M.

To be used night and morning as a liniment.

By this application she was speedily relieved. The disease was suspended for several periods, and she tells me that when they make their onset, they are much more mild, and soon yield to the liniment.

I have used it also with much good effect, in *hemiplegia* and other *paralytic* affections.

During the prevalence of the *epidemic typhus* in our city a few years ago, I was much pleased with its effects in the remarkable *sinking state* and *coldness of the extremities* to which the patients were subject. The arms, breasts, and legs, were bathed with this liniment, omitting the laudanum, and in a few minutes a comfortable glow succeeded.

I have lately used it in *cholera infantum*, where great loss of tone in the stomach and bowels, anxiety, and prostration of strength, with cold extremities, demanded prompt measures.

Bathing the abdomen and extremities with it, has by sympathy had a happy restorative effect, and out of four cases of this kind in which I used it, but *one* proved mortal.

In my own person I have proved its virtue as a *carminative* and *anti-emetic*, in a dose of two or three drops on sugar, in a wine-glassful of water.

These are some of the prominent cases, in which the essential oil of horsemint has proved useful. They are sufficient to give it a place in our MATERIA MEDICA; but I cannot conclude this paper without expressing a hope, that my brethren may make impartial trial of it, and make known the result.

Philadelphia, 8th mo. 18th, 1819.

A Case of Puerperal Convulsions. Communicated by Dr. Henry Staley, of Woodsborough, Frederick County, Maryland.

MRS. ——— was taken in labour with her sixth child, on the evening of the 29th ult. About midnight I was requested to visit her. I found her pulse natural, as regards frequency and fulness, but unusually tense and corded. I was informed that the pains had been irregular from the commencement, and by no means violent, until just before I was sent for. She was troubled with frequent eructations, and complained of an unusual distension of the abdomen. I drew from the arm upwards of a pint of blood. The os tinea was considerably dilated, and the membranes descending; the head presented at the superior brim of the pelvis, but did not appear to be the least moved by the pains, which were weak and irregular. I gave her the following infusion in divided doses: *sulphas soda* ℥j. *fol. sen.* ℥ij. which, not operating, was followed by the Butternut pill; the medicine still not operating, I ordered an

enema : she had seven copious evacuations, which caused a suspension of pain for several hours. The pulse remained unaltered. The pains, which did not recur except after unusually long intervals, continued weak and inefficient. The left hand presented with the head, still high up. The labour continued very lingering, without any other material occurrence, except a sudden pain in the head, for the relief of which I drew a pint and a half of blood from the arm. Betwixt 3 and 4 o'clock, A. M. (31st) she was delivered of a male child, rather smaller than the ordinary size. Mrs. S. appeared quite composed, conversed cheerfully with her attendants, and as no untoward symptoms were present, I did not think it necessary to hasten the separation of the placenta. She appeared inclined to sleep in a short time, and requested those present to let her sleep, as she had slept none for two nights. I inquired if she felt any thing of the pain in her head ; she said she did not, but felt fatigued. I remained with her for about an hour after she was delivered, and as no alarming symptoms occurred, I retired to my lodgings, a few doors distant. I had enjoyed but little repose, when the loud rappings at my door, and the urgent cries of doctor, doctor, from the well known voice of Mr. S. convinced me that something alarming had occurred. I repaired to the scene with all possible speed : upon entering the chamber, I found my patient comatose, with bubbles of froth projecting from the mouth ; her breathing stertorous, accompanied with a peculiar noise, which has vulgarly been compared to a "cat spitting." All was alarm and confusion : I could get nothing I called for. With my garter I bound up her arm, and opened a large orifice, by which time an old lady placed a second bandage in my reach, which I immediately applied to the other arm, and opened a large orifice in it : the blood flowed freely from both, of a colour nearly resembling black ink. After about three pounds were drawn, the blood ceased to flow ; the pulse, which had been soft before, now ceased to beat at the wrist ; the extremities became cold ; a cold clammy sweat broke out, and I thought the scene was about to close. As

soon as I got blood to flow from the arms, I removed the placenta, which had been previously separated and lodged in the vagina; about a pint of clotted blood followed its extraction. Soon after the blood began to flow from the arms, the breathing became less stertorous, and as the symptoms of exhaustion approached, suspiration commenced. The symptoms of prostration did not continue long, till the breathing again became stertorous, and the pulse returned to the wrist. I again bound up one arm, in order to elicit the flow of blood from the orifice which I had previously made: it would not flow. I instantly made a new orifice, from which I drew about a pint of blood, when the symptoms of prostration recurred, though not in so alarming a manner as they had done before: the blood again ceased to flow.

I now inquired into the manner in which the attack was made. I was informed, that not long after I left her, she had told the ladies present that she saw lightning, and she soon after complained of an acute pain in the head, which was speedily followed by convulsions, that continued nearly till I saw her.

Mrs. S. soon recovered from the second attack of apparent dissolution; the coma still continuing, and in a few minutes the stertor returned. I now abandoned all hopes of her recovery. Sinapisms had been applied, though with serious doubts relative to their propriety. I now felt confounded; I doubted the propriety of repeating venesection; and what was more mortifying still, I had good reason to conclude, from some insinuations which had been thrown out, that if the bleeding was repeated, and she died under my care, her death would in a great measure be attributed to that operation, and consequently the confidence of my patients would be weakened in regard to that noble remedy, as well as to my judgment. There being no physician nearer than five miles, it was impossible for me to avail myself of a timely consultation. The face of my patient, as well as the whole body, was excessively swoln. In a short time the distortion of the muscles of the

face, the hissing noise, &c. announced the approach of another convulsion. Recollecting the precept of Dr. Rush, to "bleed as long as the symptoms which first indicated its necessity continued, if that was till three fourths of the blood in the body was drawn off," I seized my bloody weapon once more; with a trembling hand, I pushed it deep, resolved on making the blood flow, if possible, till she opened her eyes. To my agreeable surprise, when a full pint and a half of blood had flown, she opened her eyes, as far as the swelling would admit, and attempted to answer when spoken to; she soon swooned, and I bound up her arm. At this moment, for the first time, a hope revived that she might recover. She soon became able to swallow water by spoonful, and appeared sensible when spoken to. I now applied a blister to the nape of the neck, which she soon complained of. The hair was removed from the fore part of the head, and the evaporation of æther vit. kept up from the part, which she said felt cold and agreeable. As soon as practicable, I repeated the cath. infus. the operation of which was hastened by enemata. This not operating as freely as I thought necessary, I gave sup. tart. potass. ℥ij. which was soon followed by the ext. butternut. She had nine evacuations; the intumescence considerably diminished. As she had discharged no urine subsequent to the delivery, I introduced the catheter, and drew off nearly a pint. She still appeared very much inclined to sleep, but would answer when spoken to in an ordinary tone of voice. Lemonade was given to quench the thirst, which was excessive.

Aug. 1. Gave her manna and tamarinds, ā ā. ℥j. which was followed by sulph. soda, ℥j. and fol. sena, ℥ij. which operated freely, stools watery. Venesection repeated, to relieve the recurrence of pain in the head.

Aug. 2. A strong solution of nitre, a table-spoonful every two hours. Sup. tart. potass. ℥ij. repeated, followed by the extract. butternut. Venesection repeated.

Aug. 3. Solution. nitre continued.

Aug. 4. Pulv. rhæi, gr. 40.

Her bowels have been kept in a laxative state ever since.

She soon became able to sit up in the bed, and now, Aug. 10th, she walks about the house, nurses her child, and is free from every unpleasant symptom, except an anasarcaous swelling of the lower extremities, with which she was afflicted during nearly the whole term of utero-gestation.

REMARKS.

The various and contradictory opinions advanced, and the opposite precepts which have been inculcated by gentlemen deservedly eminent in the profession of medicine, are but little calculated to prepare the mind of the practitioner successfully to combat this hasty messenger of death. One hour's delay is more than sufficient for this heart-rending malady, to set the science of medicine at defiance, and that too under circumstances peculiarly lamentable and distressing. This alone serves to show, how necessary it is, for those who are engaged in the practice of medicine, to read, observe, and reflect for themselves. The case which I have just related serves to show how erroneous it is for any physician to chain his prescriptions to the name of a disease, or to limit the extent of blood-letting by any given number of ounces.

In relating the plan of treatment which I pursued in this case, I stated that I entertained doubts relative to the propriety of applying sinapisms and blisters as excitants in this disease. This opinion has derived some strength from their application in this instance. Here the patient had recovered from the most alarming prostration, previous to the application of the sinapisms, and I feel very much inclined to believe that the one or two last bleedings in this case were rendered necessary by the irritation and inflammation produced by the application of the blister and sinapisms. Blisters, but more particularly sinapisms, are generally applied for the purpose of stimulating the nervous system, and no doubt they have this effect, and the irritation produced by them may have the effect of exciting the sanguiferous system also; consequently their application must be injurious, where the object in view is to diminish arterial action. Besides, it would be as

irrational to attempt to restore the energy of the nervous system, while under oppression from violent arterial action, as it would be to attempt to remove a compression from a fracture of the cranium by the same means. Writers on puerperal convulsions, as well as those who have written on apoplexy, generally speak of bleeding, and those excitants, as if they should go hand in hand. If the idea which I have embraced, relative to this subject, be correct, it would appear, when the one is proper, the other is inadmissible. How far I am correct on this subject, future observation must determine.

Since my attendance on the lady, whose case I related, I have read with much satisfaction, a paper on puerperal convulsions, by Dr. Dewees, published in the first volume of the Medical Recorder. This paper is worthy the perusal of every practitioner.

It may not be improper to remark, that the blood drawn was not measured; my ideas relative to the quantity were derived from the size of the vessels in which the blood flowed; I believe, however, that the quantity was rather greater than stated.

August 10, 1819.

A Case of Singular Arrangement of the Peritonæum. Communicated by R. Coates, M. D. of Philadelphia.

A. P. aged about 40 years, an Irish labourer, of a strong constitution, but much injured by excessive drinking, was admitted into the Pennsylvania Hospital, of which I was then house physician and surgeon, on the 2d day of the 9th month, 1818. By falling from a height he received severe injury of the whole body, and particularly of both ankles and feet. He lay, till his death, which took place on the 14th of the same month, in a state of great depression of the whole system, on which stimuli produced very little effect, but which generally rose to a low fever, with muttering delirium, at night.

His body was opened in presence of Dr. Lawrence, late of New Orleans, and of Dr. Emlen, both of this city. The cause of his death seemed to consist in fractures of both ossa calcis, communicating with the ankle joints, together with a general concussion of the whole body, which had produced much effusion of blood in both legs, and a less degree of it in the left kidney, and even in the substance of the heart. Our attention, however, was drawn from this, and prevented from being extended to the brain, by the singular phenomena presented by the peritonæum.

On opening the abdomen, the liver and stomach came in view, not greatly altered from their natural appearance, and not at all from their natural place. The omentum presented the common fatty appearance, but consisted of only two folds, and was attached only to the last named viscus, remaining free, and to all appearance entire, at the lower edge.

A large sac, of a polished surface within and without, extended over all the remaining contents of the abdomen, communicating with the general cavity by a foramen four inches wide. In this we could see all the intestines, except a few inches at each end, retaining their usual relative situation, and

without any marks of disease. There were no signs of inflammation, either in redness, adhesion, or effusion, either in the contents of the sac, or in any other part of the abdomen. The colon was perfectly natural in its situation, size, and structure, and appendices; but in the usual place of the attachment of the omentum, presented a smooth and polished surface. The duodenum, after making its usual curve, throughout the whole of which one side of it could be distinctly seen, entered the foramen above mentioned; and the whole of the intestinal tube following it was contained in the sac, till the termination of the sigmoid flexure of the colon, when it made a reach to the right side, passed out of the mouth of the sac, and assumed the usual situation of the rectum. The caput coli, and other parts of the large intestines usually tied down, preserved their natural situation, but were secured to the spine by an attachment of some length.

The rest of the body showed marks of the concussion in various parts, but not any of inflammation. Blood was extravasated in the substance of the heart, in the pericardial fluid, in the stomach, the spleen, and the left kidney. The liver and the right kidney were pale and shrunk; and the lungs were healthy.

The nature of this curious case may perhaps admit of dispute. It resembles, at first sight, the descriptions of mesenteric hernia, and the fact of the man's previous fall tends to favour this supposition; but we can hardly avoid considering it an original formation, when we consider some other circumstances. Such are the entire inclusion of all that part of the small intestines to which the mesentery is attached within the sac; the freedom from any thing like attachment between the intestines and the sac; the smooth polished surface which the colon presented at that part of its great arch, from which the omentum in part originates, and the polished and free termination of the omentum which was found, without any appearance of having been torn, or of connexion with the sac.

The plates by Cooper and Camper, on the above mentioned affection, differ from this case distinctly, in the particulars

above mentioned, the omentum being entire, and having its usual attachments. No case similar to the above is mentioned by either of them, nor by Morgagni, nor Lieutaud, nor, as far as I can discern, by Bonetus, though his imperfect index leaves me somewhat in the dark.

If not a hernia, it appears to me, to be an original arrangement; and here it is worthy of remark, that the two additional folds of membrane equalled in number, and resembled in ordinary position, the two deficient layers of the omentum, although, as stated above, they were totally unconnected with it. This strikes me as a fact, to be stored among others, in hopes that, at some future period, in the progress of our knowledge, it may throw some light upon the nature of this mysterious viscus.

A Case of Luxation of the Tibia forwards. Communicated
by L. Spalding, M. D. of New York.

DR. EBERLE,

THE communication of my worthy friend, Dr. Henderson, in the last number of your Recorder,* has induced me to place this paper in your hands. Yours,

L. S.

New York, 20th June, 1818.

[Read before the New York County Medical Society, 6th July.]

To Alexander H. Stevens, M. D. translator of the Baron Boyer's Treatise on Surgical Diseases, and through him to the Baron.

DEAR SIR,

In your chapter on luxations of the tibia and fibula, you observe, "Heister says he reduced a complete luxation of the

* Page 357, of this volume.

tibia backward, in a fat robust man. It appears to us impossible that any complete luxation of the tibia backward should take place. We regret that Heister has not described his case more particularly. He merely observes, that no bad consequences followed the accident ; merely a swelling and pain in the knee, which continued for a long time, and were removed by resolvent applications."

" The luxation of the tibia forwards is still more difficult than that backward."*

I have quoted these two paragraphs, for the purpose of introducing the history of a case of complete luxation of the tibia forwards.

On the 16th of November, 1801, while practising my profession in the town of Portsmouth, New Hampshire, I was requested to visit Mr. Charles Abbot, of that town, a caulker by trade, aged about thirty years, and living in Partridge street. Mr. Abbot had been engaged that day in assisting to raise a small frame store. The broadside of the building had not been elevated very far, when the man, who had charge of the foot of one of the posts, suffered it to slip, and the work consequently fell to the ground. Mr. Abbot, to escape impending danger, attempted to throw himself into the street ; but his right heel caught on the edge of the sill, and the post fell across his thigh, just above the knee, and dislocated the joint. He fell backwards, with his head and shoulders into the street, while his leg was confined by the timbers.

It was several hours after the accident before I saw him. The knee joint was completely luxated, and the limb shortened two or three inches. The head of the tibia rested on the anterior part of the thigh bone. The condyles of the femur were lodged on the posterior side of the tibia and fibula, and the patella laid exactly on the inside of the knee, facing the left leg.

I was astonished at the appearance of the limb ; but agree-

* Astley Cooper, at the 14th page of his Surgical Essays, when speaking of partial dislocations, says, " the knee is I believe rarely dislocated in any other way."

ably disappointed by the ease with which the bones were reduced to their places, a slight degree of extension and flexion only being necessary.

The patient was bled, and a solution of the acetate of lead applied to the knee. The second day he took a cathartic. There was not so much inflammation as might have been expected, from the violence done to the limb. Bandages, liniment, friction, and cold water, poured upon the joint, completed the cure. In two weeks, Mr. Abbot walked with a crutch ; in a month, he was abroad ; and in five or six months, he was quite well. The joint, however, was for years liable to occasional pains, and apt to misgive him.

Mr. Abbot is now living ; and the limb, after a lapse of 17 years, is as firm as its fellow.

An extraordinary Case of Ptyalism. Communicated by Dr. W. J. Macneven, Professor of Chemistry in Columbia College, New York.

New York, Sept. 15, 1819.

SIR—A case of death occurred here lately, which excited a degree of interest that still subsists, partly because the gentleman to whom it unfortunately happened was known and respected by a large circle of friends and acquaintances, and partly because the alleged cause, if true, might be productive of similar mischief to others. But the result of the examination which I have the honour of forwarding, will show that the supposed cause was innocent of the fact, and could not have occasioned the effect ascribed to it. It may perhaps be useful to make this known, a matter which is now left to your discretion.

Colonel C—t was seized with a most unaccountable salivation, that could not possibly be traced to mercury in any

shape whatever, unless one. He lay on a bedstead that had been cleaned with corrosive sublimate and spirits of turpentine, in a manner very usual in this city. His physician observed, that when he was removed to a new cot in the same room, the salivation began to lessen. This fact, in connexion with others, such as persons being salivated by merely breathing the air of an apartment where patients are using mercury, and the crew of a ship being salivated, on board of which mercury got loose from the boxes that contained it, these recollections countenanced the idea of colonel C.'s salivation having proceeded from the wash with which the bed was cleaned. The salivation was followed by mortification of the fauces, and the death of the patient. Hence the alarm. With a view to ascertain how far there could be any foundation for these fears, I directed one of my students to make the subjoined experiments, and he has performed them with perfect neatness and precision.

Believe me, very respectfully,

Your obedient humble servant,

WM. J. MACNEVEN.

TO DR. EBERLE.

Report of Mr. Duffy.

I conceive the subjects referred to me were, to ascertain the solubility of corrosive sublimate in spirits of turpentine, and whether it rises with the spirit when this is volatilized; for if it does not, there is no sufficient reason to suppose it was inhaled by the person who lay in the bed, or produced the affection of his mouth. To determine those points, I made the following experiments.

1. Five grammes of corrosive sublimate were triturated with 50 grammes of spirits of turpentine, sp. gr. .870. The whole was put into a phial, and repeatedly shaken, during several hours; after which, the phial and its contents were allowed to remain at rest for two days, until all that could not be dissolved had completely settled at the bottom. The solution was by this time perfectly transparent, and necessarily saturated.

2. A test tube was filled with a portion of this solution, up to a certain height, and after subtracting the weight of the tube, previously determined, the remainder gave 6 grammes, 6 decigrammes.

3. The tube was next emptied, carefully cleaned out with alcohol, dried, and filled to the same height with pure spirits of turpentine, part of that used for making the solution *a*. The weight was precisely 6 grammes and 5 decigrammes; making a difference of 1.53 in a hundred; so that spirits of turpentine dissolve very little more than one and a half per cent. of corrosive sublimate.

d. A portion of the saturated solution *a* was introduced into a small retort, a receiver adapted, and a heat of 170 Fahrenheit applied, until a sufficient quantity passed over. The same test tube was again filled to the same mark with the distilled spirit; but it weighed exactly 6 grammes and 5 decigrammes, so that no sensible portion of the corrosive sublimate was volatilized or raised in distillation; therefore none could have risen in vapour from the bed by the heat of the human body.

THOMAS ANDREW DUFFY.

[The Editor is indebted to the American Philosophical Society for the following Essay, to which it was presented by the authors.]

An Essay on Prussic Acid. Presented to the American Philosophical Society, by M. M. Duvignau, Apothecary to the Civil Hospital of Paris, and M. M. Parent, M. D. Member of the Legion of Honour, and of the Royal Athenæum of Paris, &c. &c.

Poison nè d'une fleuve, il ote et rend la vie.
Vita ex morte fluit, latet et sub flore venenum.

HISTORY AND DISCOVERY OF THE PRUSSIC ACID.

IN the year 1710, Diesbach, precipitating an extract of the sulphate of iron, with an alkali, which Dippel had used to purify the animal oil, obtained a very fine blue.

Dippel readily reproduced the blue colour, in precipitating sulphate of iron by a similar alkali.

This discovery was announced in the *Memoirs of Berlin*,* without making known the mode of preparation.

In 1724, Woodward described† in the *Philosophical Transactions*, the process for preparing this new blue, which had now attracted the attention of chemists.

For more than fifty years, the nature of this substance remained unknown; and no other opinions were added, than the possibility of obtaining this blue, with diverse substances, especially with animal matters.

Many chemists, and, among others, Geoffroi, Menon,

* *Notitia cœrulei berolinensis nupor inventi.* Miscel. Berol. 1710, l. 1, page 380.

† Woodward, *preparatio cœruli Prussiæ a Germania Missi.* Phil. Trans. No. 381, page 66, 1724.

Brown, were engaged with inquiries into this interesting matter, and established theories on the formation of this substance, after the principles of the chemistry of that time.

It was about the middle of the last century that Macquer* discovered the discoloration of Prussian blue by alkali. He observed that the colouring matter saturated the alkali like a common acid, and that it adhered to it as it did to iron.

He substituted for the theory of his predecessors, that of the saturation of the alkali by phlogiston. Nearly all the chemists adopted the theory of Macquer, without adding anything to it. In 1775, Bergman† presented the colouring matter of Prussian blue in the form of a distinct acid, having peculiar affinities.

But it is chiefly to the illustrious Scheele,‡ to whom chemistry is indebted for so many important discoveries, that we owe a more exact knowledge concerning the nature of this acid, and that it came to be isolated or separated from its base, though in union with a considerable quantity of water, which could not be effected before he did it. (We will afterwards make known the process he employed.) He concluded, from the experiments he made, that the Prussic acid, or the colouring matter of Prussian blue, is a composition of ammonia and charcoal, extremely fine.

In 1787, M. Berthollet§ added a new memoir upon the Prussic acid, in which he availed himself of the new doctrines of the pneumatic chemistry of France. His researches led him to conclude, that Prussic acid does not contain any ammonia, in perfect formation, as was supposed by Bergman and Scheele, but only its elements, azote and hydrogen, both being united to carbon; and that it contains azote and hydrogen, in proportions, approaching closely to what is requisite for the composition of ammonia. Finally, not finding oxygen in his

* *Memoires de l'Académie des Sciences*, 1752.

† Bergman, *Dissert. sur les Attractives Electives*.

‡ *Memoires de l'Académie des Sciences de Stockholm*, December, 1782, et Janvier, 1784.

§ *Memoires de l'Académie Royale des Sciences*, 1787.

experiments on the composition of the Prussic acid, he thought himself entitled to conclude that this acid does not contain this element. Fourcroy, Vauquelin, and Thenard, nevertheless thought that a change simply in the proportion of the constituent principles of animal substances, sufficed to produce Prussic acid; and in this case, their experiments militated singularly in favour of the existence of oxygen in its composition. Chemists are divided in opinion on this point. (See Chemical Statistics, vol. ii. page 265.)

Besides the learned men whom we have already mentioned, Tromsdorf, Clouet, Proust, Buchholz, Hermstadt, have been particularly engaged with inquiries into this subject. The last of these chemists has denominated this acid, the zootic acid; but the name, Prussic acid, *acidum Prussicum*, is more generally adopted.

Mr. Gay-Lussac has lately occupied himself with the Prussic acid. He is the first who obtained it pure. He has published a very excellent memoir upon this acid, in the *Annals of Chemistry*, (tome ix. page 136,) of which we will give an extract elsewhere. He says, that when this acid is left standing, it often becomes decomposed in less than one hour, and that it can rarely be preserved beyond five days. It acquires at first a reddish brown colour, which becomes deeper by degrees, until it is converted into a black mass, exhaling a strong odour of ammonia. In analyzing this mass, it is found to be composed of the prussiate of ammonia, and of carbon united with azote.

Mr. Gay-Lussac proposed the name *Cyonogene*, to express the composition resulting from the union of azote and carbon, a composition which serves as the basis of Prussic acid, and which may be obtained in a separate form; and hence the expression *hydro-cyanic acid*, for Prussic acid, and *hydro-cyanates* for Prussiates. Mr. Thenard, on the contrary, prefers the term carbonated azote, to that of *cyonogene*; *hydroso-carbonic acid* to *hydro-cyanic acid*, and *hydroso-carbates*, &c. to *hydro-cyanates*, because, says he, they possess the advantage of explaining in a precise manner the nature of the bo-

dies which they represent, and are conformable to correct principles of nomenclature.

Origin and Formation of Prussic Acid.

We have just seen how the discovery of this acid was made, by the decomposition of blood and of other animal substances. Various observations seem to prove that this acid is sometimes formed in certain diseases, in some of the fluids of the animal body. It is from this cause that the blood has been seen, in a state of decomposition, to give a stain of blue to linen.

Fourcroy * relates an interesting observation upon this subject. "A woman, aged about thirty years, laboured under a nervous and melancholic affection, in consequence of protracted grief. The principal seat of her suffering was in the epigastric region. She became extremely emaciated, with hectic fever, and a livid paleness of the skin. At last, every thing announced languor, and a disposition to decomposition of the blood. After a few days, she was seized with a convulsive trembling, and faintings, which were followed by the discharge of drops of blood from the edge of the eye-lids, the nostrils, and the ears. The linen, with which the blood was wiped off, was marked with spots of a beautiful blue."

Fourcroy was himself witness of this fact; and he thinks himself warranted to conclude, from the experiments which he made in relation to this subject, that the blood in this case contained a true Prussiate of iron. A similar cause was present in pus, from the wound of an extirpated cancer, which, during five days, tinged linen of a fine blue colour. This colour was destroyed by potash, but acids did not affect it sensibly.†

It is possible that the blue urine, as well as the blue saliva, and the blue or green sweat, of which authors speak, arise from a similar cause.

Nature sometimes gives birth to Prussic acid, during the

* Annales de Chemie, t. i. p. 66.

† Coullon, Considerations Médicales sur l'Acid Prussique, 1808, p. 13.

process of putrefaction.* In this case, when this acid comes in contact with the oxide of iron, it combines with it, and gives it a blue colour: whence proceeds, without doubt, the native Prussian blue, described by several authors.

This substance is commonly found in the form of a powder, more or less fine, mixed with argil, or spread upon the surface of the earth, or disseminated through the turf of marshes. It is generally of a pale blue, when it is first separated from the matters which envelope it, but the contact of the air revives the colour, and changes it into a blue more or less intense. Professor Haüy prefers calling it *fer azuré*, because he thinks the particular state of the iron, on it, and the principle by which it mineralized, is not as yet sufficiently determined.†

The Prussic acid exists in a state of perfect formation, in some vegetable substances; nature seems to have made it the guardian of the embryo of the *drupacea*, and has yielded it with profusion, to some plants of this family.

Since Scheele made known the process of obtaining the pure Prussic acid, all chemists have noticed a striking similarity between the odour of this acid and certain vegetable substances; such as the leaves of *lauro-cerasus*. The leaves, the flowers, and the fruit of the peach tree; bitter almonds; the kernels of apricots, of plumbs, and of black cherries; the bark, the flower, and the leaves of the *prunus padus*; the flowers of the *prunus spinosa*, &c. &c. In general, the kernels of the greater part of nut fruits contain it.

The late duke Charles, of Lorraine, had nearly lost his life from swallowing some drops of *eau de noyau*, (water distilled from peach kernels,) too strongly impregnated.‡ It is very well known that it is dangerous to chew the leaves of wild laurel. The odorous principle of Prussic acid possesses a similar deleterious power: and when it is inhaled in a gaseous state, it will destroy life in a few seconds, without convulsions.

* Fourcroy, *Système des Connaissances Chimiques*, t. ix. p. 9.

† Haüy, *Traité de Mineralogie*, t. iv. p. 121.

‡ *Journal des Debates*, 22 Decembre, 1814.

Water, and spirits impregnated with a little of this acid, destroys the life of the strongest dog, when given only in the quantity of a tea-spoonful.

It is supposed that Scheele himself, who died suddenly whilst he was engaged in new inquiries into the nature and formation of this acid, was affected by its deleterious qualities.

Mr. Shrader, apothecary, at Berlin, was the first who ascertained positively that water distilled from these substances contained the Prussic acid.* This discovery was afterwards confirmed by many chemists, amongst whom it gives us pleasure to name one of the restorers of chemistry, Mr. Vauquelin.†

When a few drops of water, distilled from any of these substances, are mixed with a solution of iron, and when this is precipitated by ammonia, to which afterwards diluted sulphuric acid is added, the last dissolves a part of the oxide of iron, and leaves a substance of a bluish green colour. The precipitate remains green during several days ; but if the mixture is raised to the temperature of boiling water, it acquires a blue tinge. The alkalies discolour it, and convert it into a yellow substance, which proves it to have been a true Prussiate of iron. The Prussic acid exists, therefore, in the distilled waters of which we have just spoken.

But, according to Mr. Vauquelin,‡ it does not exist in these distilled waters in the same state in which it is found in the ley of blood and potash calcined together, since, instead of giving like this a blue precipitate with iron, it strikes one of a green colour. This seems to show that it is oxygenated.

This chemist doubts also whether the odour and taste of these distilled waters arise entirely from Prussic acid, because,

* Scherer *allgem, Journal der Chemie*, b. x. p. 126. *Neues allgem, Journal der Chemie*, b. i. p. 392.

† *Annales de Chemie*, v. xlv. p. 206.

‡ *Annales de Chemie*, t. xlv. p. 209.

after having precipitated the acid by iron, the liquor still retains part of its odour and its bitter taste.

Chemists were not agreed in which state the Prussic acid existed in the distilled waters in question. Some supposed that it was formed during the experiment mentioned above, by the new combination of the component principles of these waters, by virtue of the reaction of the caustic alkali, and of the affinity of the oxide of iron for the Prussic acid. Others, on the contrary, regarded the volatile oil which is obtained by the distillation of the vegetable substances which have been mentioned, as the vehicles of the Prussic acid ; for the waters distilled from these substances owe their properties only to the portion of volatile oil which they hold in solution. This last opinion is confirmed by subsequent experiments.*

Thus, then, the Prussic acid resides essentially in the volatile oil of these vegetable substances. The fleshy part of fruits does not contain it ; for the berries of the lauro-cerrassus may be eaten without danger. The fatty oil of the kernels of this fruit does not contain the least trace of this acid.

Every body knows that the oil expressed from bitter almonds may be used with perfect impunity. It is chiefly in the thin pelicle, which envelopes the kernel, that the Prussic acid appears to be most abundantly found.

Modes of preparing the Prussic Acid.

FIRST PROCESS.

In order to prepare the Prussic acid, Scheele † has pointed out the following process :—Boil two parts of Prussian blue, reduced to a fine powder, with six parts of water, and one part of oxide of mercury, until the whole becomes discoloured. One half part of filings of iron are added to the liquor, and a less portion of sulphuric acid ; nearly the one-fourth of the liquor is now drawn off by distillation, which must be rectified

* Ittner. Bidrage zur geschichte der Blausære, p. 109.

† Scheele, Samtlich Werke, Bid. iii. p. 267.

by redistilling it from chalk, in order that the remaining portion of the sulphuric acid, which it may contain, may be absorbed and removed.

In this operation, the oxide of mercury attracts the Prussic acid of the iron, and is dissolved in a white crystallizable Prussiate of mercury. The iron which was added in a metallic state reduces the oxide of mercury, and at the same instant unites with the sulphuric acid, added at the same time; the heat which is employed, volatilizes the Prussic acid now separated from the mercury, which is again reduced to its metallic state. The Prussic acid, thus obtained in liquor, and partly in a gaseous state, produces, when united with alkali, the same effects with the ley of blood or discoloured Prussian blue.

SECOND PROCESS.

The Prussic acid may also be obtained, by distilling four parts of alkalinated Prussiate of iron, with two parts of sulphuric acid, diluted with double its weight of water. By this process, the Prussic acid passes into the receiver, and combines with the water which it finds there. It then exists in the form of a liquid; but as it generally contains a small portion of sulphuric acid, some calcined magnesia is to be added to it, which unites with its excess of sulphuric acid, and forms sulphate of magnesia.*

THIRD PROCESS.

Fourcroy, in experimenting with the serum of the blood, coagulated by nitric acid, for the purpose of converting it into oxalic acid, was struck with the odour of Prussic acid. The vaporous product disengaged in this experiment having been collected, he ascertained it to be true Prussic acid. Having obtained it of considerable purity, he was led to believe that this very simple process might be advantageously substituted for Scheele's method, which is much more complicated. There

* Ittner Ouvr. At. p. 7.

was disengaged with the Prussic acid, in the process, some azote ; some carbonic acid gas was also formed.*

FOURTH PROCESS.

This acid may also be obtained from the vegetable substances which contain it. For this purpose, the substance, cut up fine, is put into a retort containing a sufficient quantity of water, and distilled. Potash is then added to the liquor which has passed over into the receiver, until it turns turnsole paper, reddened by an acid, into blue. The liquor is afterwards evaporated, to the point of crystallization, the salt is collected, which is the Prussiate of potash. This salt, dissolved in a little water, is then again put into a retort, and half its weight of concentrated sulphuric acid, diluted in four parts of water, added to it. By the distillation of the mixture, the Prussic acid is obtained pure and concentrated.†

FIFTH PROCESS.

Mr. Gay-Lussac has given another method of obtaining this acid. He advises to decompose the cyanuret of mercury by the hydro-chloric acid, by means of an apparatus consisting of a tubulated retort, to which a horizontal tube about six decimetres in length, and one centimetre and a half in its interior diameter ; the first one-third part of this tube attached to the retort is filled with small pieces of white marble, (carbonate of lime,) which serves to retain the hydro-chloric acid, that may be disengaged during the operation, the volatilization of which ought as much as possible to be avoided. In the remaining two-third parts of the tube, fragments of chloruret of calcium are put, a substance that powerfully absorbs moisture, and which it seizes from the hydro-cyanic gas. The extremity of this tube is ground, and inserted into an empty receiver, surrounded by a frigorific mixture, prepared with two parts of pounded ice and one part of common salt.

* Fourcroy, *Système de Connoissance Chimique*, t. ix. p. 9. v.

† John. *Chemisches Laboratorium*, p. 400.

The apparatus being thus arranged, two parts of cyanuret of mercury, and one part of the liquid hydro-chloric acid, in a state of concentration, are introduced into the retort; the joints are luted, and it is gradually heated. The hydro-cyanic acid is immediately disengaged, and condensed in the first one-third part of the tube, among the fragments of marble. By aid of a moderate heat, it is driven through the whole length of the tube; it must remain a longer or shorter time, in contact with the chloride of calcium, and when it has become perfectly deprived of its moisture, it is driven forwards into the receiver. At the end of the operation, proto-chlorure of mercury (calomel) is found in the retort, and also undecomposed cyanure. The hydrogen of the hydro-chloric acid combines with the cyanogene of cyanure, to form the hydro-cyanic acid, whilst the chlore and the mercury unite, and give rise to the proto-chloride of mercury.

Physical and Chemical Properties of Prussic Acid.

The Prussic acid, prepared by any of the methods that have just been indicated, when pure, presents the following characters:—At the common temperature, it is liquid, transparent, without colour; its taste, at first bland and sweetish, becomes afterwards acrid, hot, and irritating, and excites cough. Its density, at seven degrees, is 0,70583.* It slightly reddens tincture of turnsole. Its volatility is so great, that it boils at a temperature of $26^{\circ} 5$, under a pressure of 0^m 76, and at 10 degrees, it sustains a column of mercury of 0^m 38. Its congelation is nevertheless not difficult to effect: it takes place at 15 degrees. When a few drops of this acid are suffered to fall upon a piece of paper, the portion which almost instantly disappears produces a sufficient degree of cold to crystallize the remaining portion of the acid on the paper. This is the only liquid that possesses this property. It has an odour so strong and characteristic, that it produces almost immediately a pain in the head, with deafness. It is indeed altogether insupport-

* Thenard, *Traité de Chimie*, t. iii. p. 462.

able, unless the vapour be diluted with a very large quantity of air; in other respects, the odour of this acid is the same as that of peach flowers, and of bitter almonds. It has a strong tendency to take on the gaseous form, and to become decomposed at a high temperature, and by the contact of light. It is thus changed into carbonic acid, ammonia, and carburated hydrogen gas. Exposed to a mixture of two parts of ice, and one of salt, it takes on, according to the observation of Gay-Lussac,* a regular form; sometimes that of the fibrous nitrate of ammonia, remaining solid at a temperature of 15° . It muddies the solution of soap and sulphuret of alkali. It takes the oxygen from the oxygenated muriatic acid, and it changes its nature by the addition of these principles. It instantly inflames, when brought near to a body in a state of combustion. It is soluble in water. Alcohol dissolves it easily. Metals have no action on it. It unites with metallic oxides, of which it changes the colour, and with which it forms insoluble salts. It has a very great propensity to form treble salts with an alkaline and metallic base. These treble Prussiates are more permanent and fixed than the simple alkaline Prussiates. Light, air, and acids, do not decompose them.†

When, in distilling the Prussic acid, concentrated sulphuric acid is used, and there is no water in the receiver, the Prussic acid is obtained in the form of gas. In order to collect it, a hydraulo-pneumatic apparatus is to be used, since water rapidly absorbs this gas.

The Prussic acid gas is light and inflammable; and when mixed with atmospheric air, and still more, if mixed with oxygen, it detonates very strongly. It burns with a yellowish flame, mixed with blue and red. Not only water, but also alcohol, absorbs it in great quantity. The Prussic acid cannot be preserved long, without being changed or decomposed. It then loses its peculiar odour, and its limpidness. It becomes at first yellow, and then of a light brown, depositing a brown sedi-

* *Annales de Chemie*, v. lxxvii. p. 128.

† *Fourcroy, Systeme de Connoissance Chimique*, l. ix. p. 93.

ment. This decomposition happens sometimes in the space of two or three weeks, although the bottle in which it is kept be perfectly closed, and not exposed to the light.

Prussic acid has never yet been analyzed, so that the nature of its constituent principles still remains in a great measure unknown. It is, notwithstanding, very certain, that it contains the azote of carbon and hydrogen; as to oxygen, it does not seem to be, as yet, demonstrated that it contains any.

The Effects of the Prussic Acid upon the Animal Organization.

The Prussic acid, whether used in conjunction with the substances which contain it naturally, or employed alone, as it is prepared by art, produces the most deleterious effects on the animal system. When inconsiderately taken in large doses, it may be considered as one of the most violent of poisons, immediately destroying life.

Substances which contain the Prussic Acid.

Bitter Almonds.—For a long time the bitter almonds have been believed to contain a matter poisonous to many animals, and cases are related of similar effects upon man. Dioscorides* first attracted attention to this subject. He asserted that the bitter almonds killed foxes and other animals; and he adds, that when eaten by men in a large quantity, they are productive of uneasiness and pain in the stomach and head. Wepfer† asserts that they are poisonous to pigeons and storks.

Mathiole and Taberna montanum,‡ say they, are fatal to cocks and hens, when they feed on them. It is said by Vicat,§ that they are fatal to pigs; and in the Ephemerides,|| that they are mortal to ducks. Mr. Fodere¶ asserts, that they kill pole-

* Discor. Mat. Med. lib. i. cap. 176.

† Wepfer, p. 240.

‡ Commentaires de Boudim sur Mathiole.

§ Vicat, Hist. &c.

|| Ephem. x-bre, 1ere, au. p. 284.

¶ Fodere, Med. leg. 2. 20. 2. p. 24.

cats. M. Deyeux has seen a squirrel die from eating a bitter almond. Finally, we add, that we have seen them productive of deleterious effects upon a paroquet; and Bauchin reports to have known persons who have fallen victims to their excess in the use of this species of vegetables.

The deleterious principle of the bitter almond is contained entirely in its essential oil: a few drops of this oil is sufficient to kill several animals.

The water distilled from bitter almonds, which is powerful in proportion to the quantity of essential oil with which it is impregnated, is not less pernicious. We have made the experiment on ourself, with a water which we distilled three times from the same quantity of bitter almonds, and to which we added, at the third distillation, the eighth part of its weight of alcohol, of 34°, in order to dissolve all the essential oil which we had obtained.

We commenced with a very small dose, (6 drops,) in an appropriate vehicle, which made but a transient impression upon the organs of sense. But, upon taking a dose of eighteen drops, we experienced vertigo, and a disposition to sleep, accompanied with a tingling of the ears and dimness of sight.

In the third experiment, in which the dose was increased to twenty-two drops, we experienced violent convulsions, with vomiting, which we succeeded, notwithstanding, to allay, by antispasmodics. We must add, however, that we experienced the effects of it for fifteen days, and we had not the courage to increase the dose, being convinced of the deadly effects of this poison on animals.

We gave to a dog of ordinary size, at first, a dose of forty-eight drops: he experienced convulsions, which were removed by the use of olive oil. The second day he took sixty drops: the same symptoms occurred, but the convulsions were more frequent; his eyes sparkled and protruded at every groan; in fine, having given him a drachm, the symptoms were reproduced, with much vomiting. He died in the space of three minutes,

The Stones of the Black Cherries.

The kernels of the black cherries also contain the Prussic acid; but we doubt whether the distilled water which is prepared in our shops, (*aqua cerasus nigr.*) contains a sufficient quantity to render it necessary to reject it, as they have done, at the colleges of London and Edinburgh. The brandy of black cherries, known by the name of *Kirschen wasser*, does not appear to be free from Prussic acid. Haller* thought that it was possessed of dangerous qualities, since he had remarked that it killed those who used it immoderately. He cites the instance of a young man who had eaten to excess of the kernels of cherries, was attacked with a great degree of drowsiness.†

Leaves and Flowers of the Peach.

The juice of the leaves and flowers of the peach tree, freshly expressed, and given in successive doses of six or nine drops to chaffinches, purged them, and caused them to erect their feathers, to have their respiration accelerated, and to become stupid. They revived in five or six minutes. One only fell on its side in convulsions; it was for some time insensible; it recovered; two more drops killed it.

The Bark of the Plumb Tree.

The bark of the plumb tree, (*prunus padus*, L.) contains the Prussic acid in abundance.

Some curious experiments have been made at Berlin with the distilled water and essential oil of this bark, with different animals, such as dogs, mice, frogs, pigeons, sparrows, and insects, which demonstrate the deleterious power of this substance. Almost all of these animals perished in a short time, in convulsions, after they had taken some of the essential oil, or when the distilled water was injected into them.

* Valmont de Bornare, Dict. d'Histoire Nat. art. Cerisier.

† Naturge chichte der giftpf. auzeu V. eiver Gerellschafft arzzter wein, 1817, p. 37.

The distilled water of this bark affords the odour of the bitter almonds.

The essential oil is yellow; much heavier than water; it is sparingly soluble in that liquid, which it renders milky.*

The Leaves of the Cherry-Laurel.

It is principally in the leaves of this plant that the Prussic acid exists in the greatest abundance. The cherry-laurel is a tree which has been known in this country since the year 1576. Its leaves are about five inches in length, and two in breadth; they are oval and serrated, thick, and of a dark green colour upon the upper surface, and of a lighter shade on the under side. Rubbed between the fingers, they exhale a strong balsamic and stupifying odour. Their taste is bitter, analogous to the bitter almond, but more intense.

Ingenhouz * says, that he has seen people much affected by the small dose of one or two leaves boiled in milk; and Mr. Barbeux Dubourg states, that he was once in company with some friends, and they were served with some soup or milk, in which the leaves of the cherry-laurel had been put; after dinner, all the guests were affected with a sensation of burning in the stomach, thirst, and vomiting.†

There was in England, about the middle of the last century, a confectioner, who employed the leaves of the cherry-laurel in considerable quantity in his creams; the bad effects of this practice were soon observed, and the use of it was vigorously interdicted in public places.‡

These leaves in substance occasioned less pernicious effects than those of the distilled articles, as the water and essential oil of the cherry-laurel. The Prussic acid is found only in the latter.

It was not until the year 1728, that the deleterious effects

* Horns. Archive fur Med. erfahrung, 1812, p. 71.

† Ingenhouz sur les Vegetaux, tom. i. p. 267.

‡ Gazette d'Epidaure.

§ Desbois, Ouv. t. ii. p. 253.

of the water of the cherry-laurel, upon those who had inconsiderately swallowed it, attracted attention. Two persons, who had swallowed it, became its victims.* One case was that of a girl of about eighteen years of age, who, having taken scarcely two spoonsful, was seized with convulsions and frothing at the mouth, and died a short time after. Her body was not swelled. The other was a girl of Dublin, who took as a stomachic about ten drachms of the water of cherry-laurel: after having experienced the pain in the stomach, and lost the power of speech, she died without vomiting, or convulsions.

Mr. Fodere† reports, that at Turin, in 1784, a chambermaid and a servant, intending to regale themselves, robbed their master of a bottle of the cherry-laurel water, which they took for an excellent *liqueur*. Having drank with avidity several swallows, they were immediately seized with convulsions, and died on the spot.

Madden, in 1728, made various experiments with the cherry-laurel water on dogs, which it killed suddenly, with convulsions.‡

These experiments have been repeated by Mortimer, Langrish, Heborden, Wattson, and others, on different animals; but no one performed such a variety of experiments, particularly, to discover the nature of the poison, as the celebrated Fontana.§ This distinguished physician regarded the cherry-laurel water as one of the most active poisons, from the great derangements which it caused in the animal economy, and the short time in which it operated, when internally applied to animals.

Administered in large quantities, the animals died almost instantly, without convulsions; all parts of their bodies were relaxed and debilitated; given in smaller does, it produces

* Phil. Trans. vol. xxxviii.

† Medicine Legale, tom. ii. p. 191.

‡ Phil. Trans. 1738.

§ Traité sur la Veniu, t. ii. p. 125.

strong convulsions. The animal is generally bent backwards, so that its head comes in contact with its tail, and its spine is protruded forwards in a manner horrible to behold; with these convulsions the animal speedily dies.

The water of the cherry-laurel produced the same effects, whether injected into the rectum, or applied to a wound. The poison acts not upon warm blooded animals alone, but also upon cold blooded ones; most promptly, perhaps, upon the last. Fontana has made experiments upon eels, animals very tenacious of life. They died in a few seconds after having drank of this water.

The essential oil of the cherry-laurel is a poison still more potent than the water: the latter, indeed, has no virtue, unless it contains more or less of the first. Three drops of the oil given to a pigeon caused it to die in about two minutes. A land turtle lost all signs of irritability, after having swallowed two drops. Fontana gave to a Guinea-pig a half of a tea-spoonful: for more than half an hour it did not appear to be affected, but soon after it fell into convulsions and agony, and died in half an hour after. He made a frog swallow three drops; it died in about two minutes.*

Pure Prussic Acid.

The presence of this acid was demonstrated by Schroder, in the bitter almond, in the kernels of black cherries, and in the leaves and flowers of the peach, the cherry-laurel, &c.

It was natural to suppose that the deleterious effects of these substances, and their products, depended upon the Prussic acid. Nothing was wanting to this conclusion, but the demonstration of the effects of that acid in a state of purity.

Schrader made the first of these experiments. He asserted, that a few drops of this acid, or even its vapour, deprived some birds of life in a short time.

These experiments have been repeated and multiplied by many others, on a great number of animals. Dr. Coullon,

* Fontana, Ouv. cite, tom. ii. p. 149.

particularly, has instituted a very interesting set of experiments upon this subject.*

Dr. Ittner accidentally experienced the effects of the Prussic acid gas. This gas was inadvertently diffused through his laboratory. He found, upon respiring a large quantity, that it operated immediately after, an oppression of the breast, and painful respiration. He was affected afterwards with shivering, and burning heat, giddiness, and vertigo, accompanied with lassitude. The fever lasted for two hours. The other symptoms were not entirely removed for eight days, during which time he was obliged to keep his bed. We may add, that these are nearly the same symptoms which we experienced upon taking twenty-two drops of the distilled water of the bitter almonds.

We do not here mention all the experiments which have been made on animals with the Prussic acid. This matter we have treated at sufficient length, and have also exceeded the bounds which we had imposed upon ourselves in this dissertation. But, we will add, that M. M. Ittner, Coullon, and Emmert, appear to be the ones, who, in latter times, have applied themselves with the greatest degree of zeal and accuracy to the investigation of this subject, we are contented, nevertheless, if we have made this subject an object of attention.

Emmert gave to a full grown dog nine drachms of the Prussic acid, in four doses. He died in forty-five minutes after, in convulsions. Three drachms were given to a young dog. It killed him immediately. Thirty-one minutes after his death, the Galvanic irritation, applied to the sciatic nerves, produced convulsions.†

Ittner poured into the mouth of a middling sized dog twelve drops of the Prussic acid. Immediately the dog staggered and fell. His respiration was accelerated, and his fæces passed involuntarily. He was seized with a violent opisthotonos and stiffness of the limbs, his eyes were fixed, and he died in about an hour.‡

* Coullon, Ouv, cite.

† Emmert, Dissertation, &c. 1805, p.10.

‡ Ittner, Ouv. p. 122.

Coullon obtained the same results upon an old shepherd's dog, covered with ulcers. He gave him, during five successive days, the Prussic acid. By this time, his appetite appeared to be impaired, his spirits low, and a propensity to sleep very manifest; his ulcers were cured. On the tenth day, Coullon gave him forty drops of the acid, and in less than six minutes he died, with piercing cries, and convulsions.*

The Prussic acid, applied in the form of a lotion, produces similar effects. Injected, in the dose of half a drachm, in the tracheal artery of a raven, it killed him in a few seconds. Poured into wounds in different animals, it produced violent convulsions. Injected into the jugular vein of a horse, in the dose of three ounces, at six times, it produced convulsions, with difficulty of breathing, and dilatation of the pupils of the eyes—The animal died in twenty-one minutes. The same effect was produced in a rabbit, by injecting one scruple of the acid into the jugular vein.†

After these various experiments, there remains not the least doubt as to the identity of the effects of the pure Prussic acid, and of the substances which naturally contain it. We believe we are safe in saying, that the Prussic acid is a poison more active upon men than upon other animals; and that its effects are most prompt when it is given in the largest dose.

It is very remarkable, that the Prussic acid gas in alcohol acts more promptly, and with greater violence, upon the animal system, than the watery solution. We are convinced that the half of the dose is sufficient to produce the same effects as the other, according to the experiments of Dr. Ittner. Sulphuric ether dissolves a large quantity of the Prussic acid gas: consequently, this compound is very active; and it is indisputably the most violent of poisons.

Ittner thought that twenty drops were sufficient to kill a man in a few minutes; and a stronger dose, for instance, a drachm, would destroy life as suddenly, perhaps, as lightning.

* Coullon, Ouv. p. 42.

† Coulon, Ouv. cite, p. 42.

Many experiments prove, that when the Prussic acid is combined with a metallic oxide, it is not so active as when in an uncombined state.

Dr. Coullon has tried the oxy-Prussic acid upon some animals, and he is convinced, that the appearances of poisoning, and other phenomena, are exactly the same; but a larger quantity was necessary.*

Prussiate of Mercury.

Ittner has made many experiments with the Prussiate of mercury. He dissolved two grains of the crystallized salt in a tea-spoonful of distilled water, and made a large dog swallow it. He became restless, with nausea, and a disposition to vomit, and trembling; but he recovered in about an hour.

A few days after, he gave him five grains of the salt, dissolved in two drachms of water. In about a quarter of an hour he became very sick. He laid down in the corner of the room; he attempted to walk, but fell backwards, without, in the mean time, showing signs of pain, or being seized with convulsions. He had taken the precaution to withhold all nourishment for eighteen hours previously; consequently, the dog was not able to vomit, although he appeared to have the disposition.

It appears, from this experiment, that the Prussiate of mercury possesses properties less deleterious than the Prussic acid alone.

Prussiate of Potash.

United with an alkaline base, the Prussic acid loses its pernicious qualities. The Prussiates of potash may be taken internally, in considerable doses, with safety. It is remarked, that this salt is capable of entering with great facility into the urinal organs. The urine of a person who had taken only three grains, dissolved in water, was sensibly impregnated with it in less than an hour and a half, and continued to be so

* Dissertation, cite p. 53.

for five or six hours afterwards. M. Wollaston has made some interesting experiments upon this subject.*

Action of Prussic Acid upon Vegetables.

Nothing approaches nearer to the animal structure than vegetables, in the irritability with which they are endowed. It was already known that several odorous substances, such as carbonate of ammonia, camphor, possessed a destructive power over vegetables.†

When we take two living branches of a plant, and put one into pure water, and the other into a bottle containing Prussic acid, the first retains its irritability for four or five days, while the second, in the course of two or three hours, becomes shrivelled and dies. If we put two of the bulbous roots of the jacinth, the one into a vessel containing pure water, and the other into a vessel filled with cherry-laurel water, the first will send forth roots, stem, and flowers, as usual; the second, on the contrary, will give no sign of vegetation; the roots will die and begin to putrify in a few days. Again, when we put the seed of the *lepidum sativum* of Linnæus, into two vessels, and sprinkle those in one vessel with fresh water, and the other with the water of the cherry-laurel, the germs of the first will be developed, while those which were irrigated with the cherry-laurel water will give no signs of vegetation.

It would appear, from these experiments, that the Prussic acid exerts a power upon vegetables, analogous to that which it possesses with respect to the animal system.

But how does it happen, we may be asked, that the Prussic acid, which exists already formed in various plants, does not extinguish their lives? We answer that doubtless the act of vegetation renders the Prussic acid innocent to the plant which produces it; and perhaps it is ultimately absorbed and decomposed for the proper growth and the existence of the vegetable.

* Annales de Chemie, 1812.

† Lamethrie, Journal de Phys. t. xlv. 1794.

Inspection of the Bodies of Animals poisoned by the Prussic Acid.

It is not sufficient merely to state the deleterious effects of the Prussic acid upon the animal system ; it is more to the interest of science to examine the changes, and various effects which the poison produces upon their organs. To make this exposition with clearness, we will examine all the appearances methodically, commencing with the brain.

1st. *The head.*—The membranes of the brain were in all cases very much suffused with blood, particularly upon the superior part. Every time that the *engorgement* was observed in the membranes of the cerebellum, the blood which distended its vessels was black. The cerebral mass did not present any remarkable appearances, except a slight variation of colour and density. We have never observed a rupture of the ventricles. We recollect no other phenomena.

2. *Digestive system.*—In the greatest number of cases, the digestive organs presented no remarkable appearances ; we only saw in the cold-blooded animals, and in them universally, a reddish serous fluid extravasated in the abdominal cavity, and a considerable quantity of a custard-like viscid fluid in the mouth and stomach. It is only in the cases in which the bitter almond was used, that inflammation of the esophagus and stomach appeared. In this case, also, the duodenum is found to be filled with a viscid fluid, resembling bile in colour and consistence.

3. *Respiratory system.*—The Prussic acid possesses, in common with many other stupifying poisons, the remarkable power of producing an alteration upon the pulmonary tissue. In almost all of the animals which suffered by it, upon opening their bodies, the lungs appeared more dense than in the natural state, of a deep red colour, and in every case grissly. They were seen in one case to contract spontaneously to a very small volume. The mucous membrane frequently, but not in every case, exhibited traces of inflammation and disten-

sion of its vessels. In two cases, extravasation of blood in the cavity of the thorax was observed.

4. *Circulatory system.*—In one case, only, an extravasation of serum was observed under the pericardium. The heart appeared to be sensible to external stimuli, for a greater or less time, according to the species of animal. In the instances of cold blooded animals, it beat for two hours after their death; and it contracted for four hours after, when irritated with any instrument, notwithstanding the previous application of the Prussic acid to it. But the contractibility of this organ continued but for half an hour, when it was separated from the body, and plunged three or four times in Prussic acid. In warm blooded animals, the contractibility of the heart did not continue for more than twenty or twenty-five minutes after death.

The contractibility is always maintained for the greatest length of time in the right side of the heart; the left auricle and ventricle are almost always nearly insensible. The venous system, and particularly the pulmonary veins, were always filled with blood, sometimes fluid, and sometimes coagulated.*

Others have but imperfectly described the state of the system after death. From our own observation, we can say, that we have always observed, in the bodies of animals poisoned by the Prussic acid, a state of considerable rigidity, with the head bent backwards. This we have also seen in cases of death from hydrophobia.

In many instances, all of the reticular parts exhaled a strong odour of Prussic acid; although it had not been in contact with them, they appeared to be impregnated with it. Duhamel was nearly suffocated by the odour which escaped from a wound made in the carcase of a dog which was killed by the Prussic acid.

Robert observed the same effects upon the brain of a large

* De Lauro-Cerasi indole, 1737, p. 4.

dog, and many rabbits, which had been suffocated by a mixture of Prussic acid gas and atmospheric air.

It is particularly remarkable, that the stomach appears to have the power of developing the odour of the Prussic acid in the substances in which it is contained, and which are but in a slight degree odorous. Thus, when bitter almonds were introduced into the stomach of a dog, his body exhaled a very strong odour of Prussic acid, while these substances, previously to digestion, were perfectly inodorous.

Does the Prussic acid change the nature of the fluids? Science is not sufficiently advanced to render it possible to resolve this question in a satisfactory manner. She possesses only the facts which may be useful in time to come; when, with considerable additions, they may become the foundation of general conclusions. It can only be said, that the blood is more fluid, unless coagulated, that it is less red. It was sometimes found of the consistence of oil, and coagulated; but these exceptions were rare, and not according to the general appearances.

The physiologist Emmert, who has bestowed much attention upon the Prussic acid, says, that in one experiment, in which he injected this acid into the jugular vein of a horse, the blood which was drawn from the animal, before the operation, coagulated, without producing a buff, while, after the operation, it was buffy. This experiment was a good one, and deserves to be repeated. It may throw much light upon the question with which we are at present occupied.

Antidotes to the Prussic Acid.

It is very important to know the means by which the accidents which occur from the Prussic acid may be remedied. Notwithstanding the discoveries with which toxology is enriched in modern times, and the researches of modern experimenters, we are entirely ignorant of a counter-agent to the Prussic acid. We must be contented to treat this subject according to the present state of science, and the opinions of different authors who have written upon the subject.

Leaving out emetics, we propose, as correctives of this acid, oil, milk, coffee, treacle, volatile alkali, but, above all, the fixed alkalies, potash and soda, and magnesia water.

The olive oil has been recommended by Vater.* He has given it in the dose of one ounce, to a dog, upon whom three ounces of the laurel water had produced violent convulsions, which completely restored him. Nevertheless, the experiments of Coullon † are unfavourable to the character of this substance as an antidote.

Milk is not entitled to much confidence, inasmuch as the leaves of the cherry-laurel, boiled in it, have been known to produce deleterious effects upon those who have used it. Mr. Coullon gave to a dog seven drops of the Prussic acid, mixed with two ounces of milk. He was immediately seized with a cough, and in about three minutes staggered and fell, vomited twice, and had his respiration accelerated. In about half an hour he recovered.

Manch maintains, that coffee is the best remedy for the effects of the Prussic acid upon the human system, not that it neutralizes the acid, but it acts as a counter stimulus, and counteracts the effects of the poison.

It is related in the Ephemerides, that seven fowls, having eaten some bitter almonds, died, except one, to whom *treacle* had been given. But Mr. Coullon, having made similar experiments, thought that this remedy did not merit much attention.‡

Ammonia has been employed by Meade. It is reported that a dog was completely recovered from a state of asphyxia, from the cherry-laurel, by the exhibition of a few drops of aq. ammonia.§ In the mean time, Mr. Coullon concludes, from his own experiments, that ammonia is not to be depended upon as a remedy in these cases; and that the dog upon which

* Dissertations, cite p. 31.

† Ouv. cite p. 58.

‡ Ouv. cite p. 63.

§ Meade, Oper. tom. ii. p. 195.

Meade experimented, would, probably, have recovered, without the interposition of any remedy.*

Schaul † has discovered, that the water of the cherry-laurel, mixed with potash, may be swallowed in considerable quantity, without danger, by pigeons and other animals. He gave two drachms of the water to a cat, and when the animal appeared to be dying, he obliged her to swallow three drachms of the liquid potash: the cat recovered. He concluded, that the active agent in the water of the cherry-laurel must be of an acid nature, inasmuch as it was neutralized and rendered inert by an alkali.

We have obtained similar results. Having mixed the distilled water of the bitter almonds with potash, we gave a spoonful of the mixture to a pigeon, without observing the slightest effect from it; while the same pigeon was afterwards killed in the space of five minutes, by the dose of a tea-spoonful of the unmixed water. We gave to a crow, a tea-spoon and a half of the mixture, which produced much disorder, but was not fatal. Upon taking an additional half tea-spoon, he fell, trembled, and died in about seven minutes, while four table-spoonfuls of the same water, mixed with soda, had produced no inconvenience upon him.

The alkaline carbonates do not produce the same effect, as the Prussic acid is not capable of displacing the carbonic.

It would be well to add to the potash, sulphate of iron, because, when Prussic acid is added to the mixture, a Prussiate is the result.

It is stated in all modern works, that chlorine, condensed in water, (or the liquid oxy-muriatic acid,) possesses the power of diminishing the action of narcotic poisons upon the animal system. Supposing it to be true, it is explained with some degree of plausibility, by the facility with which this substance unites with hydrogen. In this way, the poison may be decom-

* Ouv. cite p. 61.

† Dissert. Lit. Law. Cerrissa, &c. 1792.

posed, and the resulting matter may not possess deleterious properties. In this case, the oxy-muriatic acid would be a counter-poison to the Prussic, and probably, also, to a great number of vegetable poisons.

The great number of experiments which have been made, have not proved what has been advanced, sufficiently to establish the doctrine. The effects of the internal exhibition of Prussic acid are not counteracted by chlorine, unless the latter is given in a dose so large, as to inflame the stomach; and a dose of concentrated acid may be productive of dangerous consequences, without counteracting the effects of a narcotic. Professor Emmert, who has made many experiments to discover an antidote to the Prussic acid, says, that "no such thing exists." Potash, according to him, does not oppose, in any way, the operation of this acid, nor that of the *aqua lauro-cerasus*, or bitter almonds. It is more extraordinary that the two last mentioned substances retain their pernicious qualities, after being subjected to the action of muriate of iron, and potash.

Fontana has before observed, that caustic potash, combined with the essential oil of the *laurus cerasus*, did not destroy its activity, whether internally or externally applied. Among the medicines which I have employed," says Mr. Emmert, "the oil of turpentine appears to possess the greatest power over this poison; for which cause it was applied as an antidote, also, to the oil and bark of the *prunus padus*, with the same effect as in the instance of the Prussic acid."

The action of this remedy was not always the same in every case; but its exhibition required to be modified according to pre-existing circumstances. When the poison is contained in the stomach, without exciting any violent degree of action, it is to emetics, the most active and prompt, that we must look for relief. This practice is not only useful, by expelling the deleterious matter from the stomach, but also by the concussion which it causes in the system, thus awakening, as it were, every organ from the general lethargy.

When no substance is known capable of neutralizing the

Prussic acid in the stomach, we must moderate its effects. Among the remedies made use of to this effect, we again advert to emetics. We should in these cases avoid giving them in too large a quantity of water. After having given the oil of turpentine, and other stimulants, to rouse the sensibility, we have observed the best effects from the internal and external exhibition of a concentrated decoction of coffee. We tried also camphorated lotions, frictions on the arms and thighs, with a hard brush. Finally, in the case of a plethoric patient, bleeding might be useful, to relieve the cerebral congestion, which is an almost universal effect of this poison.

Modus Operandi of the Prussic Acid upon the Animal Economy.

In what manner does the Prussic acid derange the animal system?

We are convinced, by what has been said in the foregoing pages, that the Prussic acid acts immediately upon the nervous system, of which it excites the action in a manner very prompt, but transient; for by this excitation all the symptoms of stupor and debility are soon produced.

If the Prussic acid is given in a sufficient dose, this excitation is produced without pain: the complete extinction of the vital principle appears to be the immediate effect. It is remarkable, that no inflammation is produced in the part to which it is immediately applied, except in cases where the bitter almonds have been swallowed; that it exerts but a feeble action upon the arterial system; that it rather lessens it; on this account it has been associated with narcotics.

It has even been said, that it is the most perfect narcotic in existence, when prepared by art. The Prussic acid differs from other substances of the same class, by its great volatility, evaporating at a temperature below the boiling point of water.

Borda and Rasom reason according to the Brunonian system. They supposed that the Prussic acid possessed a quality directly the opposite of stimulus. It did not, according to them, excite the irritability, inducing thereby an indirect de-

bility, but it produced a direct debility. Borda pretends to have given the distilled water of the bitter almonds, in sthenic diseases, with success;* but shall we adopt opinions, which are founded upon a theory, the truth of which is so doubtful?

Practical Use of the Prussic Acid.

After all that has been said, we cannot doubt that it is a substance possessed of great power to alter the state of the animal economy, and which may become, in the hands of a skilful practitioner, a potent remedy in many species of disease; for a substance, a small quantity of which is able to make a strong impression, must necessarily be productive of much good, when wisely administered. The narcotics, in general, furnish examples, and the Prussic acid, particularly, appears to be capable of producing important effects. It possesses the great advantage of being capable of any degree of concentration, according to the indications of its exhibition.

Until latterly, the Prussic acid and its compounds have not been extensively used in medicine; the use of it was confined to those substances which contain it naturally, as the bitter almond, the peach, black cherry, cherry-laurel, and the *prunus padus*; but, within a few years, many distinguished physicians employed this powerful agent with the most happy effects.

We have been induced to repeat the experiments which have been made. We have not allowed any circumstance to escape our notice, which appeared to be interesting: and we hope to be able to give a full exposition of the present state of science upon this subject. We here give an account of the diseases in which the Prussic acid has been recommended by the most distinguished practitioners of medicine, to which we add a few more facts which we have observed.

Fevers.

It is only in the malignant and intermittent fevers, that the Prussic acid has been used.

* Med. Chiz Zeitung von Salzburg, 1804, bd. ii. p. 174.

We have seen it but in two instances in malignant fever : to oppose the nervous affections, remarkable for their intensity, we employed nothing but a strong infusion of the leaves of the *laurus cerasus*, in large doses, but without any good effect. The patient died without having presented any appearance of stupefaction. The body, after death, presented no signs of alteration.

This is not the case in intermittent fever. A multitude of observations prove, that a large quantity of the Prussic acid may be taken in these diseases, particularly when simple.

It is to Hufeland,* that we are indebted for the most valuable observations on this subject. He found, in many instances, that two or three bitter almonds, eaten before a paroxysm, was sufficient to prevent its accession.

Dr. Brom Langrish † says, that they have frequently used in his country, the *laurus cerasus*, in intermittent fevers ; cases are reported, which, having resisted the cinchona, have been removed by the bitter almond, given according to the prescription of Bergius.‡ He takes two drachms of soluble tartar, and one ounce and a half of honey, and one ounce of bitter almonds, made into an emulsion with one pound of water ; of this he prescribes one or two pounds per diem, during the intermission ; thus, he says, he has checked the disease. He acknowledges, that some fevers have resisted this mode of treatment, and required a recurrence to the cinchona ; but, in these cases, the emulsion was given in conjunction with the bark. He also adds, that he has seen cases which had for a long time resisted the cinchona, yield to the emulsion of bitter almonds.

Hufeland § advises, an emulsion of one and a half or two drachms of bitter almonds, in three ounces of water, in which has been dissolved an half or a whole drachm of extract of centaury. This should be given one hour previous to the

* Bibliothéque Med. t. 18. s. 386.

† Coullon, Matière Med. Tract. Bosquillon.

‡ Bergius, Mat. Med. p. 400.

§ Hufeland's Journal, 1819, 29.

commencement of the paroxysm: its good effects were proved in an epidemic intermittent, which raged in the city of Geneva.

In the year 1814, during the first invasion of the allied army, the Hotel Dieu having been converted into a military hospital, and assigned to the Russian imperial guard, we had an opportunity of witnessing a great number of cases of intermittent fever, many of typhus, but particularly of tertian intermittent.

A young English physician, attached to this body of troops, treated them in a variety of ways, among the rest, by Scheele's Prussic acid, compounded with other substances, in strong doses. Most of the patients experienced much disorder, anxiety, difficulty of breathing, vomiting, and, in short, all the symptoms of being poisoned. All, except a few, were perfectly cured in a short time.

Finally, if we give confidence to the observations of many others, the Prussic acid does not appear to be restricted in its power to intermittent fevers only, but, when given in small and continued doses, it acts powerfully as a resolvent upon obstructions of the spleen, and other viscera, consequent to fever. We are entirely ignorant of any pernicious consequences of the use of Prussic acid in intermittent fever.

Phlegmasiæ.

This order of diseases presents but few cases, in which the Prussic acid has been employed with success. It has been recommended in some cases of ophthalmia, attended with opacity of the cornea, and in cases of albugo, which were not very large: it has been used in such cases in form of a solution, of six grains of the muriate of barytes in two ounces of the distilled water of the laurus-cerasus, dropped into the eye, in small quantities.

Some of the other phlegmasiæ appear to have been happily treated with the Prussic acid. Schlegel says, he has observed the best effects in some cases of dysentery. He gave it in the

dose of five drops in an infusion of quassia, or mint, three times *per diem*, administering the cherry-laurel water and starch, at the same time, in glysters. An epidemic dysentery was treated with glysters of starch, and sixty drops of the acid, with the most happy effect.

Many gonorrhœal discharges have been suppressed by M. Schlegel, by the acid injections, repeated twice, and made with six ounces of emulsion of poppy-seed, and sixty drops of Prussic acid.

We have given it with care for a considerable time, to a man affected with squamous tetters on his arms and thighs. In this miserable state, he was continually tormented with itching, which destroyed his repose both night and day. Emollient and narcotic lotions had been ineffectual, nor could he procure any ease, until he washed the affected parts frequently with a strong infusion of the leaves of the *laurus cerasus*.

Hæmorrhagiæ.

We know of but one case of hæmorrhage, in which the Prussic acid has been successfully administered, of which we give the details.

A man of twenty-five years of age, of a strong constitution, robust, and of the choleric temperament, subject from his infancy to bleeding from the nose, and latterly to hæmorrhoids, complained for about a year of a pain in the epigastric region, accompanied with a strong pulsation in that part. In the mean time, his complaint did not prevent him from attending to his trade. One day, after having travelled about to various places, in a rough going vehicle, he experienced a considerable augmentation of the pain, which was followed by a copious vomiting of black blood, and a great degree of debility. Returned home, he complained of anxiety; his countenance expressed but little animation; the heat of his body increased; his pulse was hard and full, and his bowels were constipated. We gave him a decoction of tamarinds, to diminish the activity of the sanguineous system, and to relax the bowels; but he was not able to retain the me-

dicines which we prescribed. The irritability of the stomach increased to such a degree, that he ejected every thing that he took, even solution of gum arabic. We were obliged to have recourse to glysters, and cold applications over the stomach; despite of all, the vomiting continued, becoming more and more copious, and reducing the patient astonishingly. The pulse became small and feeble. He survived these symptoms, with cold extremities, and obstinate constipation. In this state of things, we determined to use the water of the laurus cerasus, in the dose of sixty drops in a drink, of which a certain quantity was given every two hours, and at last every hour. It was the only medicine which the patient could retain. It merits, in this case, the eulogium which *Thilineus* has given it. The first doses sensibly relieved the patient. The vomiting returned but once a day, in very small quantity, and finally ceased, as also did the pain in the epigastric region, and the anxiety. The patient was in a short time restored, and continues in good health to this day.

Neuroses.

There are no diseases in which narcotics are more necessary, and more frequently employed, than in those termed nervous: and it is in this class of disease, that the Prussic acid has been exhibited with the greatest success, after other narcotics have lost their effects, from continued use. The works of different authors contain many observations in support of those which we announce, and generally, for those which we have collected, and the most conclusive in favour of the Prussic acid, are in relation to its use in the neuroses.

Hufeand,* Thomasen, Thuessen, Baillie, Langrish, and Wurzer, have recommended the cherry-laurel water in the vesaniæ generally, and particularly hypocondriasis, arising from a disorder of the abdominal viscera, on the consequences of onanism; and in some species of mania, arising from suppressed excretions.

* Journal Pract. Azzneyk, bd. ix. st. iii.

But it is principally Philenius who has eulogized this medicine, in the disease in question. He asserts, that in these cases, its effects are as certain as those of cinchona, in intermittent fever, or of mercury, in the venereal. He thinks that it is indicated in those cases which are called atrabiliary constitutions, characterized by the dryness and dark yellowness of the skin. But, before we give faith to all these assertions, we think that it would be prudent to repeat the experiments of the physicians whom we have quoted, in order to characterize and determine with more precision, whether the effects mentioned have been really those of the Prussic acid.

We do not know that the Prussic acid has been employed in tetanus. But, if there is a disease, in which it may be useful, we would judge, from circumstances, that it must be in this, unless, indeed, it had been tried without effect.

Dr. Shallern pretends to have derived much advantage from laurel water, combined with belladonna, in hydrophobia, in the summer of 1812. A great number of mad dogs infested the streets of Paris, at that time, and many persons were bitten by them. Upwards of twenty people, who had been injured, applied immediately for aid at the Hospital Dieu, and had their wounds cauterized with red hot iron, by M. Dupuytren, on the same days, or on the morning of the following days, on which the bites had been inflicted. The wounds of all these patients cicatrized well, and were not followed by any untoward consequences.

It was otherwise with a young man, aged about 22 years, who was bitten near to the Hospital Salpêtrière, into which he was immediately admitted, and cauterized with the butter of antimony. The wound from the bite and cauterization healed quite as readily as did the wounds of those who were treated in the Hospital Dieu; but, at the end of forty days, it opened again, and all the symptoms peculiar to madness manifested themselves. Being carried into the hall of M. Recamier, this learned and industrious physician, after having done every thing which the case could require, suggested the propriety of introducing the Prussic acid in strong doses into his system,

which might perhaps neutralize the action of the canine virus. This project was carried into execution by M. Dupuytren, who injected thirty-six drops of laurel water into the principal vein of one of his arms. The result was unfavourable; the patient died tranquilly a short time after the injection of the poison.

Another person, labouring under hydrophobia, was caused to be bitten by several vipers, with a similar intention of ascertaining, whether this poison would neutralize the canine virus. This patient had, also, some Prussic acid injected into his veins, but likewise without success.

Although these experiments are unfavourable to the Prussic acid, as an antidote to the effects of the canine virus, yet we ought not to despair of deriving advantage from it, when experiments, more accurately made, more multiplied and varied, shall extend the bounds of our knowledge, concerning the mode of its employment.

We are acquainted with a lady, subject to hysteric affections, who always derives much relief from small doses of cherry brandy, in which peach kernels, cut fine, have been digested.

Hufeland * pretends to have cured a case of *spasmodic ileus*, from strangulated hernia, by the use of *aqua lauro-cerasus*, administered both internally and externally. After the employment of this article, the reduction of the hernia was readily effected, which, before its use, was attempted in vain.

Winkler gave the *aqua lauro-cerasus*, continued three or four weeks, to young female patients, labouring under very painful nervous symptoms, and especially under violent head-ach, before and after the appearance of the menses, which consisted of a black and thick fluid. After having used the laurel water, the menses came on without pain; the discharge acquired a more healthy appearance, and all the nervous symptoms vanished.

* Hufeland, Tour. der. Prackt. Heilkund, b. ix. s. iii.

Concentrated water, distilled from the bark of the *prunus padus*, has been employed, with much success, by Bremer, of Berlin, in spasmodic affections of the bowels, and in cardialgia. He himself was relieved from this disease, by the use of this remedy.

The following fact occurred to our own observation, a short time ago.

A country woman, aged 73 years, who never had suffered any serious disease, was attacked (after her return from this city, where she had eaten some soup) with a most violent spasmodic colic. She threw up what she had eaten, together with some bilious matter, without receiving any alleviation. On the contrary, the pains became constantly more severe. She vomited up every thing which was given to her. Her situation, at last, becoming extremely alarming, she was ordered to take a table-spoonful of a potion, composed of five ounces of emulsion, and one of laurel water, every hour. She had hardly taken a few doses, when the vomiting diminished, and soon ceased altogether. Next day, she was quite well again.

Hannemann recommends *aqua lauro cerasus*, in chin-cough, and in *tussus convulsivus*. *Vinkler*, also, has remarked, that it protracts their access, and lessens their violence.

We do not know what may be the efficacy of *Prussic acid*, in chin-cough. As to its employment, however, in nervous coughs, we know of no medicine which is more entitled to confidence than this article.

A lady, aged about 28 years, who was troubled for 18 months past with a short dry cough, which was stronger in the morning and evening, consulted Mr. Magendie. The parents of the patient had previously consulted many physicians of the capitol on her case, who advised a variety of things, usually resorted to in such cases, but without success. Mr. Magendie ordered her to take six drops of the Prussic acid of Scheele, mixed with three ounces of vegetable infusion. She took of this mixture, a table-spoonful every two hours. On the following day, the cough was diminished, and it disappeared entirely on the fourth day. Six months afterwards, the cough

reappeared. The Prussic acid again entirely removed it, in a short time.

We have had frequent opportunities, under various circumstances, to employ the Prussic acid in nervous and chronic coughs, particularly with young women; and we have always derived the greatest advantage from it, without ever having remarked any ill effects. It is true, we never, in any case, pushed the dose beyond twelve drops, taken at intervals, during twenty-four hours, and mixed with many ounces of some mild vehicle.

Quite recently, Mr. Magendie was successful in allaying, by the Prussic acid, in a few hours, a convulsive cough, which a lady of 40 years of age, of an exquisitely nervous constitution, had suffered under for six days, without having been able to enjoy an instant's repose. Mr. Magendie was the more willing to have recourse to this remedy, since the patient could not use any preparation of opium, nor even of the common poppy, without much inconvenience.

In 1817, knowing that Mr. Husson, professor of clinical practice in the Hotel Dieu, was making some experiments with the Prussic acid, we followed his visits during some time. We saw a woman, aged about 60 years, come to one of his wards, who, during her whole life, had suffered with extremely difficult respiration, and during the last five years was much tormented with a dry cough, which deprived her of rest, both by day and night, and which had reduced her to a mere skeleton. She excited pity in all who saw her, and prevented, by her continual coughing, all the sick in the ward she lay in, from sleeping. Mr. Husson availed himself of this opportunity of trying the Prussic acid. He ordered her to take a few drops of it, mixed with a gummy solution, and augmented the dose gradually. From the first day, the cough diminished, and, though it was never completely arrested, it was so far diminished, that the patient considered herself cured.

We might mention many more observations of a similar kind, collected from Mr. Recamier's ward, as well as that of Mr. Husson, but those we have already given are, we think,

sufficiently demonstrative of the utility of the Prussic acid in such cases.

Being assured of the efficacy of Prussic acid in the treatment of spasmodic and convulsive coughs, Mr. Magendie thought proper to inquire, whether the same means might not be of service in the cough and other symptoms which afflict phthisical patients; and whether it would not influence, or even suspend, the course of pulmonary consumption.

The result of his trials have been favourable, in regard to the first point, that is, in five persons affected with pulmonary consumption, whom he had under his care for a long time, he constantly observed the use of the Prussic acid, given in weak but repeated doses, to diminish the violence and frequency of the cough, to moderate the expectoration, and to procure sleep during the night, without exciting colliquative sweats.

During the course of the last summer, many persons witnessed the experiments made, at the Hospital Charité, by Mr. Lerminier, physician to this institution, upon consumptive patients. He gave the Prussic acid to more than twenty patients, in the dose of from four to twelve drops, mixed with a sufficient portion of water.

The greater part derived advantage from it; their coughs became moderated, expectoration more easy, and sleep more refreshing; this amelioration was the more remarkable, in proportion as the patients were less advanced in the disease.

We may conclude from these facts, that the Prussic acid, given in small doses, mixed with a certain quantity of water, may be usefully employed in the palliative treatment of pulmonary consumption, with the view of calming the cough, of facilitating expectoration, and of procuring sleep, and that it may be advantageously placed on the list of those articles ordinarily employed to produce these effects, since it does not seem to excite sweats, like the other narcotics, particularly the opiates.

After the well established efficacy of the Prussic acid, in calming and diminishing certain symptoms of phthisis, may we not hope, that by the aid of the astonishing powers of this poi-

son, the progress of this fatal disease may be abated, or even wholly arrested? Multiplied experience can alone answer this question, so important to society and to medicine. We will now relate two cases, in which there is reason to presume, that phthisis was arrested in its course, by the use of the Prussic acid.

A lady, of an exceedingly nervous constitution, after having experienced a reverse of fortune, was taken, in 1814, with all the characteristic signs of phthisis of the first degree. Circumstances did not admit of her paying proper attention to her health, and she had consulted but one physician. The disease made rapid progress during the first months of 1815. She then consulted Mr. Magendie, who found her affected with all the symptoms of tuberculous pulmonary consumption, of the second degree. Her coughing was very frequent during the day, but much more violent in the morning and evening, by which she was extremely exhausted: the expectoration was evidently purulent; want of sleep, night sweats, fever, considerable emaciation, pain in the left side of the breast, &c. &c. Mr. Magendie recommended the Prussic acid. She took it, in the dose of from six to ten drops, in twenty-four hours. The use of it was continued for about two months. From the first days of her taking it, the cough and other symptoms diminished; and by the time the acid was carried to the dose of ten drops in twenty-four hours, all the symptoms had disappeared. Respiration became free, the cough, the purulent expectoration, and the excessive night sweats, were removed; in a word, this lady was perfectly cured. She suffers under no symptoms at this time, except a little feebleness of the breast, and a greater sensibility to atmospheric variations.

An English lady, aged about 29 years, of a tall stature, but of a feeble constitution, whose breast is broad transversely, but narrow from behind forwards, was much subjected to catarrhal affections from her infancy. About two years ago, in passing from France into England, she was taken with a copious catarrh, with bloody expectoration, and pain in the left side of her breast. The treatment consisted in bleeding, blistering,

and the other usual remedies in such cases. She was cured; but she nevertheless retained a small dry cough, not very troublesome during the day, but very violent in the evening and morning. Various means were resorted to for relief in England, but all ineffectually. Supposing that the climate of France would be more favourable to her situation, she returned to Paris, about five months ago. In spite, however, of the beauty of the season, and of her remaining in the country, her cough became, evidently, worse. She now consulted Mr. Magendie, who, after an attentive examination of her present symptoms, and the antecedent circumstances of her case, considered her as labouring under phthisis of the first degree. He advised the Prussic acid, in the dose of eight drops in three ounces of some bland vehicle, to be taken in the course of twenty-four hours. In three months, the cough ceased, she regained her flesh, and is at present perfectly well.

Are these two cases to be considered as examples of the cure of pulmonary consumption? We cannot consider it as decided. We may, however, add a fact, to which we were witness, lately, and which may remove some doubts, and throw a new light upon this important question.

In the beginning of this year, Mr. —, merchant, in *Rue de Seine*, saw one of his children, aged 8 years, die of phthisis, who, from its infancy, had been troubled with a scrofulous affection. Lately, a sister of this child, remarkable for the beauty and freshness of her colour, and possessing the appearance of the most perfect health, lost, by degrees, her appetite. She became gloomy and peevish, and a small cough came on, to which little attention was paid. It was thought that the country air would be of service to her, and she was accordingly removed to a country situation. But, after staying there for two months and a half, she returned from it, with a slow fever, attended with copious sweats, looseness of the bowels, and a small and fatiguing cough, especially during the night and morning, returning in frequent attacks during the day. The emaciation of the little patient was considerable, and formed a remarkable contrast to the plumpness which she

possessed a few months before. The parents, whose family had been cut off by pulmonary consumption, could readily recognize in their daughter the disease, by which their first child had been carried off. They now put her under the care of Mr. Magendie, who did nothing but prescribe a half drachm of Scheele's Prussic acid, in four ounces of water, to be taken by tea-spoonfuls, every hour. He laid aside all the gums, narcotics, and the whole list of medicaments, usually resorted to in such cases. The dose was carried to the extent of ten drops in a day, and in two months she was restored to her health. There remained no symptom of the disease, except diarrhœa, which continued for a long time, and was arrested at last with much difficulty. She has, indeed, not as yet recovered her former fulness of body, and she still remains a good deal enfeebled; but every thing indicates the perfect restoration, in a short time, of her habitual health.

Organic Affections.

There are a variety of disorders, which are, from their very nature, beyond the reach of the healing art, but which are not the less entitled to our particular attention, from the great sufferings which they frequently occasion, and which, if we cannot cure, it is our duty to endeavour to alleviate. In cases of this sort, the Prussic acid often affords much relief, after all other medicines have lost their beneficial effects.

In scirrhus, and even cancerous tumours, the Prussic acid, employed both externally and internally, seems to afford the greatest advantage. Baylie used it with success, under the form of a cataplasm, made with millet meal, and a saturated infusion of the leaves of cherry-laurel, or a certain quantity of the distilled laurel water.

Thomassin, Thuessin, as well as Cheston, recommend an infusion made of four ounces of the recent cherry-laurel leaves, with two pounds of boiling water, and sweetened with honey, in cancer of the face. This infusion is taken internally, in small doses, and applied externally to the cancer with a compress.

These authors do not only regard the Prussic acid as a palliative in cancerous affections, but they assert that they have effected the complete cure of such disorders, both in the scirrhus or ulcerated state, by this remedy.

The extract of belladonna, dissolved in the Prussic acid, was given with very good effects, in a cancerous affection of the stomach.

We are surprised that the Prussic acid has not been more frequently employed as an anthelmintic, since we so frequently see verminous affections resist obstinately the most active and boasted medicines.

Hufeland says, that he knows two cases, where the continued use of sweet almonds, mixed with six or eight bitter almonds, brought away teniæ that could not be expelled by other means.

Dr. Brémer says, that he has employed with success the distilled water of the bark of the *prunus padus*, against ascarides.

Finally, of late years, trials have been made with the Prussiate of mercury, in syphilitic affections, and always with complete success. Those who have employed this remedy, say, that it acts in a slow and sure way, and that it deserves to be reckoned as among the most useful of the mercurial preparations, especially, as it affects the lymphatic system, and the digestive organs, less violently than the other preparations of this metal, and may by consequence be employed with patients enfeebled or exhausted by other remedies.

There are a number of cases published in Horn's "*Archives of Practical Medicine*," that attest the efficacy of this medicine, and that prove, at the same time, that its use is neither accompanied nor followed by ptyalism, nor by cardialgia, diarrhœa, or any other disagreeable accident.

FOREIGN PAPERS.

Dissertatio Inauguralis de Morbis Syphiloideis. By J. Burder, M. D. formerly House Surgeon to the Lock Hospital. (Analysed and translated from the Latin.)

[From the Medico-Chirurgical Journal, for July, 1818.]

A MORE important question than that respecting the distinction between syphilitic and syphiloid diseases, has not agitated the medical world for many years. There never was a point of practice where surgeons ran into such extremes, as in the treatment of these diseases. A considerable portion of medical practitioners view the distinction above-mentioned as worse than useless; considering the syphiloid as merely modifications of the syphilitic affections, and requiring *mercury* for their certain eradication. Another class has lately started to propagate the doctrine or rather the practice of curing syphilis and pseudo-syphilis, in all their Proteian forms, without any mercurial preparation; thus completely illustrating the line of the poet,

Incidit in Scyllam cupiens vitare Charybdem.

There is yet a third class, who, adopting the wise precept,

“In modio tutissimus ibis,”

look upon the distinction (at least as far as it regards *practice*) between syphilis and pseudo-syphilis as founded in just and accurate observation; and who consequently neither rashly prescribe mercury in *all* forms of genital defecations, nor withhold it in those forms of venereal diseases, which the experience of ages has stamped with the character of genuine syphilis.

But, it may be asked, what can have given origin, and that so lately, to these clashing opinions and practices? We conceive that the origin must be attributed to some of the following opinions: 1st. The total error of our predecessors in employing mercury for the cure of syphilis, when it might have been cured without that remedy. 2d. The total change of the disease within these few years. 3d. The inaccuracy of distinction which yet obtains between syphilis and pseudo-syphilis.

1. That our predecessors—and indeed ourselves, should, till within these eighteen months, have been entirely in the dark, respecting the necessity of employing mercury in the cure of syphilis, is rather too much for sober credence; and yet this inference is pretty freely drawn of late. It is supported, apparently, by this fact:—"We now, say the anti-mercurialists, see every primary symptom of syphilis disappear without mercury; a fact that could, not hitherto be ascertained, *because* these primary symptoms were all treated by this remedy, to which the cure was falsely ascribed." This reasoning is specious, but perhaps not quite convincing. In the early part of the late war, a disgraceful regulation prevailed in the British navy, viz. that of stopping a certain sum out of the pay of seamen who contracted the venereal disease; which sum was appropriated to the surgeon. This measure had a most injurious effect; for the seamen, not liking either to lose their pay, or to have the word "Venereal" appear against their names at the pay-table, concealed their complaints, or *quacked* themselves, till their constitutions were often ruined. The consequences were, that the primary symptoms almost invariably disappeared without mercury, and that too under all the disadvantages of a sailor's duty and irregularity of living; but at subsequent periods, of various duration, secondary symptoms broke out with terrible violence, and our naval hospitals were filled with the horrible victims of syphilis treated *without mercury*! The evil at length became so glaring, that it was found necessary to change the system entirely; and then, when the surgeons were applied to early, and treated their pa-

tients with mercury, secondary symptoms almost disappeared from our fleets and hospitals. This faithful portrait may not be without its use and applicability at the present moment; and may serve as a clue to unravel some of the problems which now occupy the minds of practitioners.

2. As to the total change in the nature of the syphilitic virus, within these few years, the supposition is extremely improbable, and not sufficiently supported by facts. But that circumstances, which we cannot pretend to explain, have rendered the *true syphilitic sore* much less frequent, and consequently the syphiloid abrasions *comparatively*, more common than heretofore, we are free to admit, since it accords with our own personal experience. But still we believe that the poison *exists*, and that, *as such*, it can only be cured by mercury.

3. Notwithstanding all that has been written on the diagnosis between syphilis and pseudo-syphilis, there is still great uncertainty on this point. Nothing but experience in one of those great establishments, where the various shades of these Protean diseases can be contrasted and compared, on a large scale, can bring any thing like conclusive evidence before the public. It is with this view that we here rescue from the mouldering shelves of Alma Mater a most valuable document, drawn from the first source of knowledge on the subject, and recorded without any bias or preconceived theory. It is a record of facts and faithful observations, which, we confidently predict, will not only be read with interest, but *remembered* with advantage by the private practitioner.

The male organs of generation are not exempt from the influence of the more general causes of disease; while they are particularly liable to be acted on by temporary external stimulus, and disordered secretions from the female organs. The venereal disease has not been known in Europe more than three centuries; but diseases of the genitals have certainly been observed in the earliest ages of medicine. Celsus, in par-

ticular, has accurately described some species of ulcers situated on the penis; and although he does not even hint at their causes, thinking probably that they rose spontaneously; yet it is likely that some of them were the offspring of sexual intercourse. The antiquity, however, of the syphiloid affections, does not rest on conjecture alone. It is clear, from the writings of ancient physicians, that ulcers and urethral discharges not only appeared spontaneously, but had often sprung from commerce with unhealthy females, long before the venereal disease was introduced into Europe. The learned Astruc quotes many authors of the thirteenth and fourteenth centuries, who accurately described various diseases of these parts, as excoriations—puriform secretions—phymosis—paraphymosis, gangrenous and phagedenic ulcers, &c. some of which are said to have been induced—“*propter coitum cum muliere fætida.*”

Panic-struck by the unresisted ravages which syphilis first committed, the physician and the patient totally forgot those minor affections to which the sexual organs had been prone, and which were now indiscriminately referred to the *nova pestis*. To such an extravagant length was this idea carried, that a simple ulcer of the fauces, from whatever source originating, caused the unhappy sufferer to be deserted by his friends, and left to die, or recover by the efforts of nature, unaided, unpitied, and alone! The physicians themselves were not more accurate in their diagnoses, when they discovered the mercurial specific. Absorbed in admiration of the wonderful effects of that divine medicine in syphilis, they inferred, from a false species of logic, that every morbid symptom, removed by the specific, must have the same origin. A similar unfortunate error too generally prevails, even in the present time. Many there are, who require no further proofs of the nature of syphilitic disease, than that it arose after sexual intercourse—wears any, however fallacious resemblance to the common forms of the disease—and disappears during the exhibition of mercury. A clearer knowledge, however, of the morbid qualities of other poisons, has convinced physicians that causes essentially different in their nature, may produce symptoms

that are parallel in many points, but which tend to different ends by different means. Thus in FRAMBESIA, a disease indigenous in Africa, from whence it was introduced to the West Indies, the eruption, followed by ulceration, and frequently attended with violent pains of the limbs, has been known to spread by actual contact, and to bear a considerable resemblance to lues venerea. But experience proved that frambesia attacked the human frame but once, and at a certain period of life:—that in its first stages it is exasperated by mercury; and that it gradually exhausts itself, and eventually disappears with little or no medical aid.

The disease called “Sivvens,” and which has been so long known in the south-east parts of Scotland, affords a still more striking example of pseudo-syphilis. Here, as in frambesia, a peculiar contagion is transmitted from person to person. It is likewise followed by ulcers—eruptions—pains of the limbs, &c. but seldom, if ever, can the powers of nature remove them. Mercury, as in syphilis, is the only specific; yet, however strong the resemblance may be, we are constrained to acknowledge that syphilis and sivvens arise from two distinct sources.

The description first published by Gilchrist, and the cases subsequently by authors, particularly Dr. Adams, show us that the first appearance of this disease is an aphthous speck or cutaneous ulcer—or, more correctly speaking, a grey crust of coagulated lymph, the membrane beneath being inflamed. The succeeding ulcers are remarkable for a florid surface, and thin edge. They spread rapidly; and have not the callous edge and base of the true syphilitic sore. In sivvens, too, buboes are rarely, if ever, to be seen. If, then, diseases so distinct in certain *principal symptoms*, have yet others which are common to both; it is at least probable that many morbid states, though proceeding from a very remote cause, and requiring different modes of treatment, may put on a tolerably exact resemblance of syphilis. There can be little doubt, that certain diseases, which attacked the genital organs in the time of Celsus, are equally prevalent at present; and since to those must be added many diseases of the same parts arising from

the incautious use or abuse of mercury, and an old syphilitic taint, it will be acknowledged that a wide field for investigation and discrimination lies open before us.

The superior genius of John Hunter first turned the attention of physicians to syphiloid diseases. The extraordinary symptoms consequent on transplantation of teeth, and resembling those of syphilis, but often vanishing spontaneously, gave him reason to suspect that many other morbid effects, considered syphilitic, were not so in reality. This opinion, first taken up by Hunter, was pushed to a still greater extent by his sagacious commentator, Dr. Adams, and his learned and celebrated admirer, Mr. Abernethy. Much useful instruction has also been derived from the indefatigable labours of the illustrious John Pearson, whose great talents and extensive means of information have given him a wonderful insight into this Proteian malady. Still later, Mr. Carmichael has enriched the common stock of science by much valuable and curious matter.

Causes of Syphiloid Diseases.—An interesting point of inquiry first presents itself; namely, whether these diseases arise from certain modifications of the syphilitic virus, or from other totally distinct poisons? Hunter believed that new morbid poisons were daily swelling the list:—this opinion we can neither confute nor confirm, without considerable difficulty. A late intelligent writer (FERGUSON, *Med. Chir. Trans.* vol. iv. art. 1.) is confident that true syphilis becomes milder in proportion as it is more widely disseminated; provided that dissemination be not checked by the exhibition of mercury. He endeavours in this manner to account for the venereal disease attacking the inhabitants of Portugal and Russia in so mild a form, that it seldom requires any other remedy than sarsaparilla, or decoction of the woods, for its cure. But this poison produces such virulent effects on strangers, as defy the power of mercury itself. It is certainly reasonable to suppose that a man long exposed to the action of any morbid poison, may become less easily injured by that virus; but it is by no means so likely that the distinctive marks of a poison of this kind should

so totally disappear as to be with difficulty cognizable. From the information I have been fortunate enough to acquire from army surgeons, who have served in those countries, and from the description of symptoms by the abovementioned ingenious author, I should conclude that the disease is rather syphiloid than syphilitic. Its tendency to sloughing and phagedenic ulceration—its spontaneous disappearance; and the frequent aggravation of its symptoms under even a cautious exhibition of mercury, draw, I think, pretty clear lines of distinction between it and syphilis.

Without doubt, climate, constitution, greater or less diffusion, and different modes of treatment, may make considerable variation in the disease; but we can hardly believe that these circumstances will altogether change its nature. Among ourselves, notwithstanding the manifold and Proteian forms of pseudo-syphilitic diseases that are daily remarked, it is quite clear that syphilis itself has not lost any ground. Its presence is, at this day, distinguished by the very same pathognomic marks that are handed down to us by the oldest authors who have seen and recorded the disease. We still see the hollow, sloughing, cineritious surface—the hardened edge and base of the ulcer; and these marks have remained unchanged, since the poison was first introduced into Europe. The disease, moreover, is known to yield to mercury alone. It seems therefore probable, that syphilis itself still retains its pristine nature and form; and that the syphiloid diseases, described in modern times, either arise from some new morbid poisons, or are the same that attacked the human race before syphilis was known; but which, for a long time, were not distinguished from the effects of the syphilitic virus. If, indeed, we could prove that new poisons are generated; still we must expect to see, again and again, those same forms of disease attack the organs of generation, that were described so many ages ago. We cannot prove that *these* have been annihilated. However this may be, we are greatly embarrassed by the questionable and multiform shapes which these diseases assume.

The syphilitic virus, although its power is great, does not

injure all that are exposed to its influence. Several men have been known to have had sexual intercourse with one infected female, at very short intervals, and yet but a small proportion of them contracted the poison. As it is highly probable that most of them came in actual contact with the virus, it seems that a pre-existent capability of infection, or kind of diathesis, is necessary for its reception. The effects of the virus producing syphiloid ulcers are still less universal; and the nature of the virus itself more varied. It is well known that many unfortunate prostitutes, although unconscious of being diseased, have infected numbers who have had commerce with them, with syphiloid diseases. Nay, it is beyond a doubt, that even the *natural secretions* of females who have promiscuous intercourse with men—who pay no regard to cleanliness—and who destroy their health, strength, and life, by excessive drinking, become so acrid, that few can have commerce with them with impunity. Yet, in these very females, the syphiloid discharges and syphilitic virus are totally distinct; since the female that communicates the former disease may have no ulceration, whereas the syphilitic virus can only proceed from a syphilitic sore. The true venereal taint is known by a peculiar and constant train of marks, but the syphiloid poison produces different effects, according to the condition of the part, and the constitution of the patient. The above-mentioned source of syphiloid virus, in all probability, gives rise, at one time or other, to every form of pseudo-syphilitic diseases; the great variety of which may depend on the great variety in the nature of the cause; for when we see a syphiloid ulceration excited by the matter of a violent gonorrhœa, we find its nature less changeable than when excited by a less specific cause. A still greater contrast between the origins of syphilis and pseudo-syphilis is exhibited in the examples of men contracting the latter from healthy and decent females. Many unequivocal instances of syphiloid ulcers have occurred in men who had no intercourse with any but their wives, whose character and freedom from local disease, precluded all idea of syphilitic taint. It is very remarkable, that in almost every example, impaired digestion,

and even a general bad state of health, had preceded the syphiloid symptoms. We are forced then to conclude, either that a secret and unobserved change had taken place in the natural secretions of the wife, or, which is much more likely, that nothing of the kind would have happened, had not an unsound state of health in the husband increased the morbid diathesis previously existing in his constitution, and rendered it susceptible of impression, even from the natural and otherwise innocuous secretions of the female organs.

We must also recollect, that many syphiloid diseases arise without preceding sexual intercourse, or at a very long interval afterwards—in short, spontaneously, and without any apparent cause. In such cases, it cannot be expected that the organs of generation should be more affected than any other part of the body, unless predisposed by some morbid change. Where syphiloid diseases exist, then, without any external cause, the latter must be sought in a deteriorated state of the whole body; and particularly in that state produced by repeated and long-continued courses of mercury, by frequent attacks of syphilis, by intemperance in the use of ardent spirits, by neglect of cleanliness, or by two or more of these causes combined. This mal-habit of body was aptly termed by Mr. Pearson, *CACHEXIA SYPHILOIDEA*, which he conceives to be either idiopathic, or arising from the above-mentioned causes. With these observations in view, let us proceed to the examination of syphiloid causes as predisposing and occasional.

The predisponent are the most numerous, and are either topical or general. *Local predisposition* may arise from the application of acrid secretions, either of the sebaceous glands, the matter of gonorrhœa, of preceding ulceration, or, in short, any irritating cause which renders the part more susceptible of subsequent irritation. General or constitutional predisposition may spring from a variety of causes that otherwise produce a bad habit of body—but particularly from long and debilitating courses of mercury. This differs, materially, from what has been termed *the mercurial disease*, inasmuch as it does not directly follow the exhibition of that medicine, but

usually at a remote period. It also differs in many other essential points. So powerful, too, is sometimes the syphiloid diathesis, that eruptions, ulcerations, and other phenomena, resembling syphilis, arise without any apparent exciting cause.

The *exciting causes* we have already alluded to, viz. diseased secretions affecting the healthy—or healthy secretions affecting the predisposed—the matter of virulent gonorrhœa, especially if applied to excoriated surfaces, &c. These will be best elucidated by examples.

The first is from notes taken at Mr. Pearson's lectures.

1. A man six months after marriage, and who had had no commerce with any other than his wife, became affected with a urethral discharge, which Mr. Pearson cured. In a fortnight afterwards, ulcers arose on the extremity of the prepuce, which were also healed. Soon after this, the inguinal glands swelled; but subsided on the application of evaporating lotions. Two months afterwards, he had superficial copper-coloured spots on various parts of the body; and these too disappeared under the use of the decoctum sarsæ compos. This man never was affected with syphilis, nor did he ever use any mercury.

2. The next example shall be abridged from the writings of that excellent surgeon, Mr. Abernethy. A man who was married to a perfectly healthy woman, and who positively affirmed that he had had no connexion with any other woman, became afflicted with a urethral running very much resembling a venereal gonorrhœa. This discharge was soon afterwards attended with swelling and partial ulceration of the penis.—These symptoms were followed in succession by a bubo—ulcerated fauces—and cutaneous eruption,—all resembling syphilis. The physician that attended him relied on his assertions of innocence, and abstained from the exhibition of mercury. All these morbid phenomena spontaneously disappeared.

Since writing the above, I received a letter from John Pearson, Esq. surgeon of the Lock hospital, in which he gives so clear and apt an instance of *syphiloid disease*, arising from

the first species of exciting cause mentioned, that I cannot avoid giving the reader a history of the case. Mr. Pearson says, in the same letter, that no less than five cases of married women, in many respects resembling the following case, have been seen by him in half a year. "A man had a chancre on the interior surface of the prepuce, for which he went through the proper course of mercury, and was perfectly cured. About six months after his recovery, he married a woman, who, in the fourth or fifth month after her marriage, had a small ulcer on the internal surface of the labia pudendi; which, however, was healed by some mild ointment. About three months after the ulcer was healed, the woman's health growing bad, an ulcer of the tonsil soon showed itself; and copper-coloured blotches, covering the whole surface of the body, speedily followed. There was also great uneasiness in the muscles and joints. Her medical attendants, supposing the disease to be syphilitic, sent her to London: Mr. Pearson pronounced the disease not syphilitic, and cured the woman by the Portuguese decoction. Towards the end of the cure, all symptoms having disappeared, he prescribed small doses of mur. hydr. corros. and her health has now been good for two years. The husband had never any local or general symptoms of the disorder after the course of mercury to the present day. This case suggests the following queries:—Is it not probable, that though no disease showed itself in the husband, either the former attack of syphilis, or the course of mercury, or both together, wrought some change of the secretions of the part that had first been affected? And might we not suppose, if such a change had been wrought, that it brought on the syphiloid disease in the wife, her constitution being easily infected, owing to the impaired state of her health?"

In both the two first examples, the females were totally unconscious of disease; yet as the symptoms first showed themselves on the genital organs, and afterwards ran through the same course with syphilis, we must conclude that some morbid matter was absorbed *in coitu*, which (the predisposition being in existence,) gave rise to the syphiloid disease.—Here, too, we

may glance at the symptoms related by Mr. Hunter as arising from the transplantation of teeth. Most of the subjects from whom the teeth were taken, were in perfect health. Nevertheless, in about a month after the transplantation into the sound jaw, an ulceration spread round the tooth; and eruptions, ulcerated fauces, and acute pains in various parts, were the consequence—all disappearing without the aid of mercury.

Examples of syphiloid diseases, arising from the acrid secretions of prostitutes, might be multiplied to a great amount, from the writings of Abernethy and other modern authors; but I shall only select one instance from a little work not much known. "Several young men," says Mr. Whitsed, (*Practical Remarks on Diseases resembling Syphilis, Peterborough, 1813,*) "who had connexion with the same woman, were attacked with buboes in the groins. The woman soon afterwards left the place, and affected several other young men, in a neighbouring city, with similar symptoms. In these, on the exhibition of mercury, the glandular tumours increased, and most of them sloughed or suppurated; but when the mercury was discontinued, the local affections quickly disappeared, and no constitutional symptoms ensued."

Of the third existing cause which I have mentioned, namely, the matter of virulent gonorrhœa, I have lately met with an example, which I shall here relate. A. B. nineteen years of age, caught a slight gonorrhœa, and also lacerated the frenum preputii, the first time he had connexion with a woman. The laceration was nearly healed at the end of ten days, by common applications, when small doses of calomel were given daily for two or three weeks, and the gums were made moderately sore. The gonorrhœa, too, was soon checked by an astringent injection. Shortly after the mercury was left off, the patient was affected with cough, and the common symptoms of cynanche tonsillaris. Aphthous specks, and small ulcerations, soon appeared on the left tonsil, and by uniting formed an ugly ulcer. The ulcer soon spread wider and deeper, and copper-coloured spots had just made their appearance on the abdomen, when I first saw him. The history of the case, and the appearance of

the symptoms, proved to my mind that the case was not syphilitic; and I prescribed the internal and external use of the nitric acid. The patient being otherwise healthy, only gentle purgatives were employed. In three weeks, the ulcer of the tonsil, though spreading in one place, was healed almost entirely round, and the blotches had totally disappeared. Some excoriations, occasioned by the contact of the former matter of gonorrhœa, on the penis and scrotum, were also removed by a solution of sulphate of zinc. At the end of the fourth week, the left tonsil was almost healed, when a small ulcer was discernible on the right tonsil. The decoctum sarsæ was now used liberally, and with advantage; but at this period, the patient having imprudently exposed himself to wet and cold, was soon affected with general swelling of the lymphatic glands of the penis and groin, accompanied by much inflammation, tumefaction, and ulceration of the fauces; and much constitutional irritation. Then speedily followed, pimples of a vivid red colour, collected into small clusters on various parts of the body—scaly eruptions of a dark colour round the margin of the scalp; and a thickening of the periosteum of one tibia appearing suddenly and without pain. At this unlucky juncture, the patient took two, and only two, of the mercurial pills, formerly mentioned, which evidently increased the inflammatory symptoms, and brought on, or at least renewed, the ptyalism. Bleeding, the warm bath, purging, and diaphoretics, abated a little the febrile symptoms, when sarsaparilla, with occasional doses of hyoscyamus and opium, were again exhibited. The ulceration of the fauces, which, in one place, had spread from the left tonsil to the uvula, and was proceeding from the right to the larynx, by degrees put off its frightful appearance, showed a cleaner surface, and lost the white unequal edges by which it was surrounded. The crop of pimples, too, vanished, and the thickening of the periosteum soon disappeared. The fauces at length healed, and the patient got well. Now, if symptoms like the preceding, and so closely imitating those of syphilis, show themselves after gonorrhœa, and yet may be cured without the use of mercury; is it not probable that ma-

ny, if not all, the cases supposed to be syphilitic, and attributed to the absorption of gonorrhœal matter, are, in reality, syphiloid?

Some singular examples of syphiloid disease, from ulcerated mamillæ, have fallen under my own observation. The following case occurred in the Lock hospital, London, while I was house surgeon in that institution. M. Young, a respectable female servant, was affected, at the time of her admission, with inflammation, swelling, and slight ulceration of the tonsils—a scaly eruption of a pale red colour over the whole body—swellings on the shin bones; and a small ulcer in the corner of the mouth. She attributed these symptoms to her having nursed her sister's infant, after he had sucked a nurse for ten weeks, who was suspected to have syphilis. Eruptions had shown themselves on the child's body a few weeks before his death; and one week after his decease, the ulcer appeared in the corner of the servant's mouth. Her fauces were affected about the same time; and a few weeks after this, the eruption broke out. These symptoms entirely disappeared in about a month, by the use of the warm bath—diaphoretics—and decoction of sarsaparilla.

Diagnosis of Syphilis and Pseudo-Syphilis.

1. A certain unpleasant sensation accompanies and follows the breaking out of a chancre; and this increases more or less through every stage of it, even during the administration of mercury. Syphiloid ulcers, on the contrary, have often arrived at a considerable size, before they have become troublesome. In a few instances, however, they become suddenly and violently painful, but not in general, without some preceding uneasiness. 2. A chancre generally begins like a pustule or vesicle, which becomes a small whitish or grey ulcer. But syphiloid sores, though they are sometimes pustular at the commencement, generally put on the appearance of an excoriation, or trifling ulceration. 3. A chancre generally proceeds slowly and regularly, preserving more or less exactly an oval, or cir-

cular shape, and spreading evenly on all sides. But a syphiloid ulcer is generally irregular in its progress ; it either gives no trouble at all, or spreads rapidly. It often spreads in one place, while it heals in another. Sometimes it shows a tendency to heal, and the next day to spread. 4. A chancre has generally a foul, ash-coloured, hollow surface, (excepting when seated in the common integuments,) with a thin slough, or thick pus tenaciously adhering to the centre, which is without granulations. A syphiloid ulcer, on the other hand, seldom shows a surface so evenly hollowed out—it is more irregular, superficial ; and granulations are often detected in some part of it. A chancre may be particularly distinguished by its hard base, which extends beyond the ulcer—is circumscribed, and often deep-seated. But in the syphiloid ulcer, there is either no hardness at all ; or it is only slight and diffused—not circumscribed. 6. At a very early period in chancre, its projecting, round, and callous edges are distinguishable. In pseudo-syphilis, the edges are generally thin, flat, and more or less ragged—sometimes, however, they are round and callous ; but this is only observed when the ulcer becomes chronic and languid ; disappearing by the use of stimulants. 7. Lastly, a chancre on the body of the penis, and which is not yet influenced by mercury, sometimes wears a livid hue, which, in a few days, changes to dark brown. Nothing of this kind appears in syphiloid ulcers. The time, too, that elapses before the chancre appears after infection, varies less ; for it seldom shows itself before the 4th, or after the 14th day. Whereas the syphiloid ulceration often appears in 20 or 30 hours after sexual intercourse—sometimes not for weeks.

By some of the foregoing diagnostic marks, we may, in general, distinguish chancre from syphiloid ulceration. But in no case should we trust to *local* examination, however minute. We should scrutinize with the greatest care the mode of life, the peculiarity of constitution, and the state of health of the patient. These will often guide and fix our judgment, which is liable to err without such an investigation.

Primary syphiloid ulcers are,—1. Excoriations of the glans

penis, often produced by the matter of virulent gonorrhœa, and often followed in turn by urethral discharge, particularly where the patient has been affected with strictures, or has had violent means used for the cure of previous gonorrhœa. These excoriations are rarely accompanied by any material loss of substance ; but frequently show an irritable surface, and spread fast in irregular directions. Mr. Pearson first discovered that one-half of the glans penis frequently became affected, while the other half remained free ; the latter becoming diseased as the former healed. I have seen the whole interior surface of the prepuce, and exterior surface of the glans penis, covered with syphiloid ulcerations of this kind. These are frequently mistaken for chancres, but not with impunity : they too often spread, with violent inflammation, on the exhibition of mercury. Cooling, and gently astringent lotions, are found to be best suited to these ulcers. The constitutional syphiloid symptoms, in these cases, are also aggravated by mercury.

2. *Preputial herpes*, generally preceded by a sense of heat and itching, appears like small vesicles collected into clusters, that attain their full growth by the end of the second or third day. They now break, and disclose small excoriations, with white surfaces, and edges only slightly elevated ; and not hard, unless irritated by improper applications. In eight or ten days, they generally begin to heal under thin brown scabs. The learned Dr. Bateman has observed these vesicles, situated on the exterior part of the prepuce, dry up, without any ulceration, on the ninth or tenth day, and turn into scabs. Mr. Pearson has seen the same. It is not yet ascertained whether this species of herpes ever rises spontaneously, where there has been neither venereal taint nor the stimulus of mercury : it is apt to recur.

3. *Aphthous Ulcers*—not preceded by vesicles, nor surrounded by inflammation—very superficial—generally covered by a little adherent matter—often coalescing. These are easily cured by simple cooling applications, and do not give rise to constitutional symptoms. Ulcers somewhat similar show themselves sometimes after the use of mercury, but *these*

are preceded by vesicles, nor do they observe the course of herpes above described, nor throw out scabs, when they are healing.

4. *Tubercles* of the prepuce, generally round, and of a red-dish purple colour; surface considerably elevated, and about the size of a walnut. When they break, they leave a deep, foul ulcer, with high edges. They heal slowly; but not so much so as *venereal* tubercles. They do not seem to produce secondary symptoms. Mr. Pearson has observed them principally in gouty subjects, and those whose constitutions had been much injured by long courses of mercury.

5. *Superficial Ulcers*—with slightly elevated edges—generally uneven; without hardness of the edges or base, but surrounded by a red circle. They usually begin by pimples, and proceed gradually. The surface, which is commonly whitish, sometimes red, shows no appearance of granulations; and when carefully examined, seem, either to be on a level with the surrounding parts, or to project a very little. Their chronic state is generally distinguished by a thickened edge. They sometimes accompany inveterate buboes, but seldom, if ever, produce secondary symptoms. The cure must be varied according to the degree of the inflammation. Gently astringent lotions are often useful; and Mr. Carmichael recommends the application of brown oxide of mercury.

6. *Ulcers of the Surface*—without either induration or raised edges, chiefly taking place on the external prepuce—scrotum—labia pudendi, and on the breasts of women who had suckled or nursed infected children. These ulcers have generally a polished, smooth appearance, without granulations—covered by a viscid matter. Ultimately, the surface becomes fungous—healing perhaps in the centre, while it spreads widely around. These ulcers often put on a healthy look, on the exhibition of mercury; but soon become stationary, showing thick and hardened edges. Constitutional symptoms, such as ulcerated fauces, and crops of pimples on the skin, are often the consequence of these ulcers. When irritable, the mildest

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applications only are to be used :—Afterwards lotions containing nitric acid, or nitrate of silver.

7. *The Phagedenic Ulcer.*—This is of a bright red colour—without granulations—having thin everted, or inverted edges—very irritable, and generally attended by more or less inflammation. It is often known to attack those who have drank too freely of raw spirits after sexual intercourse. It spreads with a fearful rapidity ; and is sometimes surrounded by a livid circle ; it exudes a thin corrosive liquor. This ulcer frequently arises spontaneously in syphiloid cachexy, resulting from the excessive use or abuse of mercury. I have seen it creep along the ala nasi, and at last eat off a great part of the nose. Secondary symptoms follow this form ; but they have not yet been sufficiently characterized to hazard a specification.—This ulcer requires to be treated with very mild remedies ; as every stimulating application is dangerous. Lotions and opiate fomentations externally, with the free exhibition of opium, hyoscyamus, conium, internally, are often necessary. When the inflammatory symptoms run high, local and general bloodletting is essential. Mercury is injurious.

8. *Sloughing Ulcer*—is at first a good deal of the phagedenic nature ; but proceeds more rapidly—and more by sloughing than ulceration.—The phagedenic and sloughing ulcers frequently alternate. In some instances, the secretions of the same female will produce sloughing ulcers in several men, in succession ; but in general, the nature of the phagedenic ulcer depends on the constitutional idiosyncrasy and predisposition of the man himself. Celsus has accurately described both the sloughing and ulcerating forms. I have seen the whole penis, nay, the scrotum and testicle, destroyed by the sloughing ulcer. Much inflammation usually attends this dreadful disease. The secondary symptoms are generally characterized by pustules and papulæ. Venesection must sometimes be had recourse to, to relieve the great irritation of the system. Purgatives—refrigerants—diaphoretics,—opiates are particularly necessary. The external applications must be lenient. After the tone of

the system has been sufficiently lowered by evacuations, bark, wine, and the diffusible stimuli, are useful.

9. We have already observed, that syphiloid diseases may arise from virulent gonorrhœa. Mr. Pearson has, for years, described certain anomalous symptoms that occasionally follow this urethral flux, and thinks that it gives rise to one variety of syphiloid cachexy. I myself have seen many cases of this description. Whether or not constitutional symptoms ever follow simple gonorrhœa, without excoriation or abrasion of surface, seems to admit of doubt. Carmichael appears to think that they possibly may. But since so very many who labour under gonorrhœa escape these symptoms, while the greater part of those who experience them, have had excoriations, abrasions, or warts, it seems probable that some of the latter are necessary for the production of the former.

10. *Syphiloid Bubo*.—There is scarce any primary syphiloid ulcer that will not occasionally produce irritation of the neighbouring lymphatic glands. But the excoriations from virulent gonorrhœa—superficial ulcers, both with and without projecting edges, phagedena, whether of the sloughing or ulcerating kind, most frequently give rise to syphiloid buboes. The latter, however, sometimes arise without any previous primary ulcer; and, when this is the case, affections of the skin and fauces are apt to follow. It appears to me, either that simple irritation is transferred to the nearest gland, not being equal to produce ulceration of the part; or that the vessels of the part absorb the morbid matter, and then transmit it to the glands in the vicinity, the part itself undergoing no morbid alteration. This kind of blind absorption must be owned to be very rare in true syphilis, the poison of which, generally, if not always, ulcerates the part it touches. When an ulcer does not precede a syphiloid bubo, much functional disturbance in the constitution usually ensues. In scrofulous subjects, the abscess, for the most part, proceeds slowly, and turns to a troublesome suppuration without much pain, changing to an irregular, languid, and chronic ulcer. In other instances, however, the suppuration is rapid, and accompanied with much

pain. The subsequent ulcer does not show the thick edge and unequal surface of the former species, but is rather distinguished by thin edges, either inverted or everted—and a raw, red, angry surface. These ulcerations spread rapidly, attended with great constitutional derangement. It is much more difficult to distinguish between the diseases of the glands, than between the primary ulcers that arise on the genitals. I may, however, remark, that the syphiloid virus generally affects the *upper* row of glands in the groin; and when they break, they have not the copper-coloured edges, so often seen in the syphilitic bubo; nor do they proceed so regularly. The syphilitic virus, almost always, affects one, and only one, gland of the middle row. The phagedenic bubo can hardly be taken for any other except that which arises from mercurial irritation. As for the languid syphiloid bubo of scrofulous habits, it has a totally different nature and course from that arising from syphilitic virus. The syphiloid bubo, also, spreads very irregularly. I have seen it spread upwards to the abdomen, and in other directions, while the original scite was quite healed. The treatment must vary with the symptoms; for a languid syphiloid bubo requires stimulating medicines; whereas a phagedenic or irritable one demands mild and lenient applications.

Secondary Syphiloid Symptoms.—These, the limits of this essay will not permit me to describe but with much brevity. As these frequently arise without any ulcer or local affection, we cannot deny them the term *constitutional*. The first decided mark of syphiloid cachexy, where no local affection preceded, is often an ulceration of the fauces; but in general, it will be found, on inquiry, that the patient's health had not been good for some time previously to this affection. The ulceration of the fauces also is usually the first constitutional symptom that succeeds syphiloid bubo; but it seldom remains long without cutaneous eruption. This is not, however, the invariable succession of events. Flying pains are the frequent fore-runners of faucial ulceration; and the cutaneous eruption is often preceded by general inflammatory symptoms. The species to which belong constitutional *syphiloid* symp-

toms, is not so easily distinguished, as are primary syphiloid sores, in consequence of the almost endless variety of the former. Yet a careful inquiry into the history, and an accurate examination of the progressive symptoms, will generally lead to a true judgment of the case.

The affections of the fauces and of the skin are usually preceded by a sense of languor, restlessness, and inactivity. Every kind of attention is irksome; the spirits are depressed—the sleep is perturbed—the appetite fails—the tongue is whitish, and often coated with a viscid mucus—the bowels are torpid and irregular—the action of the heart and arteries is greatly increased—the pulse being quick, sharp, and full. The skin, especially in the evenings, is unusually hot;—all these symptoms having a remission towards the morning, with universal perspiration. The pains in the head are sometimes excessive and obstinate; while those in other parts of the body, at first fugitive, become more stationary in the arms and legs, being often mistaken for rheumatism. In a few days the patient is unexpectedly annoyed by a cutaneous eruption; or by some difficulty in swallowing, which, when we examine the throat, we find to depend on an ulceration of the *velum pendulum palati*, or of one of the *tonsils*. When these phenomena are fully established, there is generally a slight remission of the febrile irritation; but, if the disease prove obstinate, the fever returns with increased violence, and with more of the hectic appearance.

In syphiloid diseases, it is well worthy of remark, that constitutional symptoms, as ulcerated fauces and eruptions, frequently appear within the second, third, and fourth week after infection; so that we have seen in the same person, and at one and the same time, a primary ulcer of the genitals, and affections of the throat, skin, and periosteum. This wonderfully rapid progress, and simultaneous existence of two different sets of symptoms, will form a strong line of demarcation between syphiloid and syphilitic virus; for in the latter, secondary symptoms seldom show themselves at so early a period, and affections of the membranes and bones *follow* those of the fau-

ces and skin, (unless resisted by mercury,) as regularly as the latter follow a primary bubo or chancre.

Syphiloid Affections of the Fauces.—These are so dependent on, and modified by the general state of health, that it is difficult to give any description that may comprise the different varieties. I shall only trace three of these, which fell under my own observation.

1. *Chronic Ulcer with raised Edges.*—This, in general, first appears on the tonsils,—is accompanied with very little pain, and liable to be mistaken for a syphilitic ulcer. It has, however, a more uneven surface than the syphilitic sore. Its edges are less round and callous—the loss of substance less apparent—it is not covered by that gelatinous, whitish, or grey secretion; or if it is, it is easily washed off. Granulations may generally be discerned in some part of the ulcer, which, like the primary sore, seems to spread irregularly, healing in one place and extending in another.

2. *The Phagedenic Ulcer* is sufficiently distinct from the syphilitic, because it has neither thick, white, nor rounded edges, but a thin transparent margin. The surface, too, which is more or less red and dry, is very irritable, with a disposition to slough. It is, in general, excessively painful—spreads very fast, and frequently attacks the posterior fauces.

3. *Superficial Ulceration of the Fauces.*—This extends more like an excoriation than an ulcer, and is usually accompanied by an erysipelatous inflammation of the fauces. In this affection, the *vela pendula palati* sometimes become perforated. The complaint is easily distinguished from venereal ulceration.

Syphiloid Eruptions.—The varieties of these are by no means, as yet, well defined. The most common syphiloid eruption is known by *papulæ*, of a clear red or copper colour, gathering into irregular clusters, and slightly raised above the surface. Sometimes these *papulæ*, as they proceed, put on the appearance of vesicles or pustules. In general, however, they preserve the *papular* character until they undergo desquamation. In some instances, the syphiloid eruption more

nearly resembles the common plain syphilitic blotch; because very suddenly, and before any remedy has been applied, it becomes squamous. Of this nature was the eruption of Margaret Young, already noticed. Abernethy has faithfully delineated this eruption, which shows itself in many cases of pseudo-syphilis. We may distinguish the *squamous syphiloid blotch* from the *copper-coloured syphilitic eruption*, by the following marks. The *former* is of a brighter colour—feels rough to the touch, and is less depressed in the centre. On close examination, it will be found to be *many-sided*, and not a smooth *circular* area, as in the syphilitic blotch. It leaves behind it no mark or depression of the skin.

Dr. Bateman has lately described a *tubercular* eruption of the syphiloid kind, attended by ulceration of the fauces, but without previous affection of the genitals. One woman thought she had caught the infection from her husband, who, two months before, had laboured under a similar disease. The tubercles, of a reddish colour, smooth, and shining, are one or two lines in diameter—rise barely above the surface, and have a depression on the top. The disorder generally disappears in a fortnight or three weeks, under a course of bark, mineral acids, and sarsaparilla.

The *papular* eruption, as before observed, more frequently than any other, follows primary syphiloid ulcers. A *phagedenic* ulcer, however, is often followed by pustules with inflamed bases, and apt to terminate in ulcers with fungous excrescences. It is probable that syphiloid eruptions appear under as great a variety of forms, as those cutaneous defædations that arise from syphilitic virus. Dr. Willan has noticed several of *these*: Pearson also, among others, has described a pustular eruption very much resembling variola, and leaving pits in the skin—an eruption of tubercles of an obscure red colour without pus—and the common squamous maculæ. These three he considers as syphilitic. I have myself seen eruptions both of pustules and papulæ, which, from concomitant symptoms of lues, and their giving way to mercury, I concluded to be truly syphilitic.

With these demonstrative proofs in view, we cannot but wonder at the opinion of a late learned author, Mr. Carmichael, who asserts that the squamous blotch is peculiar to syphilis, and never seen in pseudo-syphilis; whereas, although eruptions of papulæ and pustules, are often seen in the *latter*, they are never found in true syphilis.

Syphiloid Affections of the Membranes and Bones.

The pains in pseudo-syphilis are generally excessive, especially towards night; and yet the nocturnal exacerbation is not so distinctly marked as in real syphilis. The syphiloid pains are less confined to certain parts than the syphilitic;—they often change their situation, and do not attack the middle only of the cylindrical bones, as in the other disease: but the great joints also, so as to be often mistaken for rheumatism. A frequent symptom of pseudo-syphilis is a chronic inflammation of the synovial membranes of these joints, not unfrequently accompanied by a considerable effusion into their cavities. The bones themselves, as far as my observations extend, are seldom affected early in syphiloid diseases, except where the complaint is exasperated by the use of mercury. The periosteum is first affected by inflammation, and effusion beneath it and between its tissues. Induration and thickening are the consequences. This kind of node is of an irregular appearance, and rarely gives much pain. Sometimes they appear very suddenly, on the head, the clavicles, the ulnæ, and the tibiæ. I have, myself, seen them rise and vanish in the space of seventy hours. In these instances, the tumours were soft and compressible—apparently effused serum or coagulable lymph.

Treatment.

When we survey the various causes, predisposing and exciting, of syphiloid diseases, it may readily be supposed that it is a very difficult task to lay down explicit and simple indications of cure in all cases. We have seen that these diseases

may arise spontaneously—or, more properly speaking, without any exciting cause ; and we have also seen that they may come on as the remote effects or consequences of a long or injudicious course of mercury. Their most frequent origin, however, may be traced to the absorption of some irritating matter. In syphiloid diseases, it is necessary to remember, that, contrary to what takes place in syphilis, the symptoms gradually exhaust themselves, as it were, and, unless exasperated by injudicious treatment, disappear without medical aid. In this respect, many syphiloid diseases intimately resemble frambesia, which, though a chronic and tedious complaint, runs its stated period, and vanishes spontaneously. The *local* treatment of syphiloid affections has already been glanced at, but it must depend on the general principles of surgery, the state of the health being particularly attended to. The three following indications may probably include the principal remedial measures which it is desirable to pursue. 1. To weaken as much as possible the poison disseminated in the body. 2. To oppose and counteract its effects. 3. To support the strength of the patient.

It is to be regretted, that no specific has yet been discovered that is capable of effecting the first indication. Mercury, which is so wonderfully efficacious in subduing the syphilitic virus, seems rather to irritate than assuage the acute stages of syphiloid diseases. We must therefore beware of exhibiting this mineral, when there is much ulceration, and particularly where there is any phagedenic or irritable ulcer, which is always exasperated by a stimulus of this kind. Mercury, however, when carefully and sparingly exhibited, is often observed to heal speedily the chronic species of syphiloid ulcers. If the doses be moderate, and the course not too long persisted in, this favourable change may be permanent. But too often, the practitioner, elate with success, is imprudently led to push the medicine to the full effect of ptyalism, when dreadful symptoms, in general, ensue, and the disease continues to harass the patient for months, or even years. We may, therefore, employ mercury to alter to a more healthy condition those parts

affected by languid and chronic pseudo-syphilis ; taking care to use the mildest preparations—as the blue pill, which must be very soon left off, lest mercurial irritation attack the constitution. For as, on one hand, these diseases are known to exhaust themselves ; so, on the other, mercury, however useful it may be for a time, is found, if long continued, to prove injurious to the healing powers of the constitution, and finally to render the disease more inveterate and incurable.

Sarsaparilla, prepared according to the *Ed. Pharm.* and administered in large doses, with mild antimonial diaphoretics, is possessed of no mean efficacy in syphiloid diseases, whether arising spontaneously, or from evident causes, especially in weak habits, and after the abuse of mercury. I have so repeatedly seen ulcers of the fauces and other parts—pains, and obstinate cutaneous defædations, yield to this remedy, that I cannot speak too highly in its praise, especially as relapses after its use were rare. But there is no security in its exhibition, unless the dose be from one to two pints daily.

To answer the second indication, namely—to resist the effects of the poison, we must direct our attention to the most urgent symptoms. Thus, during the time that an ulcer is rapidly spreading, and sometimes while eruptions on the skin are coming out, great irritability of the system prevails, and requires our serious notice. In robust constitutions, and where there is much increase of vascular action, venesection will, in general, be useful:—and in most cases, purgatives, diaphoretics, with or without opium, diluents, the warm bath, and low diet, will moderate the local and constitutional symptoms, and prepare the system for sarsaparilla, the mineral acids, and other tonic or restorative remedies.

The irritation and pain are sometimes so urgent, that full and repeated doses of opium, henbane, conium, lactuca virosa, &c. are necessary ; and ought to be administered, in these instances, until some remission of the pain or manifest effect ensue. In three very dangerous cases of syphiloid ulceration, which resisted every other means, large doses of opium suddenly and wonderfully mitigated the symptoms, as soon as the

pain and irritation were soothed. The doses were then gradually and cautiously diminished. The greatest attention must be paid, in all syphiloid diseases, to the state of the chylipoietic organs, which exert a surprising influence over both local and constitutional affections.

The last indication, which regards the support of strength, is often one of no slight importance. In syphiloid cachexy, it too frequently happens that we can do little more than palliate the more urgent symptoms, and keep up the strength, while the disease runs its course, or is overcome by the powers of the constitution. The latter therefore must be assisted by nourishing, but not stimulating diet—by gentle exercise—good air, and the moderate use of tonics. The warm sea-bath is often of singular service. Sarsaparilla has been already mentioned. Bark, and the various preparations of iron, are sometimes useful; but, in general, they do not produce such certain effects in syphiloid diseases, as in some other kinds of debility. Fowler's solution of arsenic I have sometimes known to give temporary relief. The milder preparations of mercury, in very small doses, are often beneficial in the latter stages of the disease, the same as in frambesia. Its exhibition, however, as I remarked before, ought always to be limited to a short period, and the least approach to ptyalism or mercurial irritation should be carefully guarded against, by leaving off the medicine.

The following case, which the kindness of Dr. Munroe, jun. professor of anatomy and surgery in the university of Edinburgh, has favoured me with, clearly proves that superficial diseases of the bones sometimes arise spontaneously. These affections, in adults, are too frequently attributed to syphilis: mercury, too, will sometimes give a temporary relief to these affections of the bones and their circumvesting membranes, while it increases the morbid predisposition to a future attack.

“A boy, aged eight years, who had previously enjoyed good health, was attacked, without evident cause, with acute pain in the right side of the forehead, which was succeeded by a swelling of the upper jaw of that side. The swelling gra-

dually increased until the eye-ball and the whole superior maxillary bone were considerably protruded. Although there was no suspicion of a syphilitic taint, mercury was prescribed. Under its action, the bone detumefied, and the eye-ball returned into its natural situation. After the medicine, however, had been continued about eight weeks, a dark red spot appeared on the middle of the *palatum molle*, which was succeeded by extensive ulceration of that part, as well as caries of the palatine process of the superior maxillary bone, leaving an opening as large as a shilling. The vomer was at length also destroyed. At this period, country air, and a course of cicuta, completely arrested the course of the disease, and health was ultimately restored."

If such an establishment as the *Lock Hospital* can be considered capable of affording strong evidence on a *venereal* question, we appeal to our professional brethren, whether the foregoing authentic document does not bear us out in our preliminary observations, and prove that, for all practical purposes, there are sufficient grounds for a distinction between syphilitic and syphiloid diseases, the *former* requiring the administration of mercury equally as much as at any former period. If this be the case, an accurate *diagnosis* of the two diseases is one of the greatest desiderata of the present day, and we trust that the foregoing article will be found a valuable contribution to this desired object.—*Ed. Medico-Chir. Journal.*

Elements of Pathology and Therapeutics; being the outlines of a work intended to ascertain the nature, causes, and efficacious modes of prevention and cure of the greater number of the diseases incidental to the human frame; illustrated by numerous cases and dissections. By Caleb Hillier Parry, M. D. F. R. S. Member of the College of Physicians of London, &c.—Vol. I. General Pathology.—Octavo, p. 463. London, 1815.

[From the Edinburgh Medical and Surgical Journal, for January, 1819.]

THREE years have elapsed since this important and elaborate treatise was presented to the public. After having so long delayed to notice it, perhaps we ought to set out by defending ourselves from the imputation of insensibility to its high merits, an imputation to which our conduct may have exposed us. We shall, however, spare all protestations on that head, hoping sufficiently to vindicate our discernment in the sequel. We also forbear to trouble our readers with any explanation of the circumstances to which this delay has been owing: in fact, the detail would both be irrelevant and unnecessary, for as Dr. Parry's is a work of all times, embracing subjects not of transient attraction, but general principles of permanent interest, it is a matter of extremely little consequence at what particular moment the analysis of it be taken up.

Before entering upon that analysis, we may be permitted to say, in general terms, that the book is a model of profound investigation and luminous exposition, and will, in all probability, secure to Dr. Parry a place amongst those medical authors whose works are to be read for ages. It displays, indeed, a profusion of talent, and a superabundance of observation, and proves how eminently the author must have excelled in that high, though difficult requisite of a great physician—

the faculty of detecting, disentangling, and classing obscure, complex, or opposing phenomena, and of eliciting elementary views from a skilful induction of isolated facts, never before placed in the same light, although in themselves sufficiently familiar. Even the errors of the work (if such indeed they are) are not the errors of a writer of secondary capacity, but bear the stamp of an understanding of the first order, dazzled now and then, perhaps, and led astray by the brilliancy of its own conceptions.

The work consists of 1023 aphorisms of various lengths, rising out of, and following one another in pretty regular gradation, and marked by Roman numerals. Though we admit that an author of Dr. Parry's ability is, generally speaking, the best judge of his own arrangement, having contemplated his subject in all its bearings, still we cannot but regret the choice he has happened to make, as being, we think, by no means happy: for we greatly fear that, by his neglecting the ordinary mechanical divisions of sections and subsections, his illustrations have often been needlessly incumbered.

As a necessary introduction to the chief subject of the work, he has given a very able and spirited account of the anatomy and physiology of the sanguiferous system. Contrary to Bichat, Dr. Wilson Philip, and most modern physiologists, he maintains that the heart alone is sufficient to carry on the blood through the entire march of the circulation, without any aid from the muscular power of the arteries or the oscillatory power of the capillaries,—an opinion which he has still farther illustrated in a subsequent work on the arterial pulse. Indeed, he denies such powers altogether, and contends, that if they existed, they would operate as much in repelling the new unda of blood, as in propelling the one already contained in the vessels. We do not wish to take up this controverted subject, yet we cannot help observing, that the ingenious author, in making the objection just stated, seems to have overlooked the known property of fluids to press equably in all directions, and the consequent necessity there is for the blood to move forward, when urged by the revertibility or contractility of the

larger arterial branches on the side, its reflux being prevented on the other, by the semilunar valves in the ostium of the aorta. It appears to us that the arteries have a vermicular motion,—that their circular fibres, like those of the œsophagus, contract not synchronously, but in instantaneous succession; and thus invariably carry the column of blood onward from trunks to branches. We have no doubt whatever of the inherent contractile powers both of the arteries and capillaries,—powers quite independent of the heart: indeed, the author himself, though he refuses a muscular contractility to the blood vessels, in the end allows them a vital one, which he calls tonicity; and this, in effect, amounts to the same thing.

It is a first principle with Dr. Parry, that all the habits of civilized society tend to produce in mankind at large an excess of nutrition, and consequently a greater plethora of the vascular system than what is either natural to the human frame, or consistent with the healthy exercise of its functions.

He contends that, in consequence of this plethora, a disordered state of the whole, or of some part, of the sanguiferous system, is by far the most frequent of all those deviations from health incident to the animal frame. This disordered state sometimes consists in the circulating fluids being excessive either in quantity or velocity, or both: at other times, though seldomer, the blood is defective in either or both of these particulars.

According to the known laws of the sanguiferous system, it is evident, that the general velocity of the circulating mass remaining the same, that portion which supplies particular parts may be retarded or quickened beyond the rate of motion in the rest of the system. Again, in point of quantity—it may be in excess or defect in one part of the system, while it is in due quantity in the rest; or it may be in excess in almost the whole body, while in some individual organ it may be defective, and *vice versa*. In short, these two circumstances of quantity and velocity, he contends, may be so combined and modified, as to cause excessive or defective force of the circulation, either in the whole body or in particular parts.

But (as might *a priori* be expected) it is more particularly in the extreme vessels of the brain, lungs, intestines, or other parts of the animal frame, that this irregularity of sanguineous distribution and impulse is apt to exert mischievous effects; and, as the capillary system is an indispensable component part of every tissue in the body, the author believes it to be the substratum in which most diseases, of whatever character, take root. For in whatever organized part disorders appear, or to whatever textures they happen to be confined, they have all one circumstance in common, namely, that they are affections of the sanguiferous system and its dependencies; as is evident from the vessels of the part invariably taking the lead in all such derangement of function or of structure.

In fine, that the various degrees and modifications of excessive or defective momentum of blood, in the arterial, capillary, and venous branches of the body, are the proximate cause of almost all diseases, is the fundamental principle of Dr. Parry's pathology. This principle he expounds at great length; and then, in the remainder of the volume, proceeds to apply it to the chief diseases that assail the human frame, and to explain their phenomena and causation, by means of it.

He begins with inflammation and its consequences, that disease being one of the most conspicuous examples of increased momentum of blood. After a very scientific account of the kind and order of the symptoms, and some powerful reasoning to prove that they are, in every instance, the product of augmented impetus,—general or local,—he comes to the following conclusion:

“ If, then, in every palpable case of inflammation there is excessive momentum of blood; if we increase the inflammation precisely in proportion as we increase the momentum, and diminish the inflammation precisely as we diminish the momentum; we have, I think, just right to consider the excessive momentum as an indispensable cause of what we see of inflammation, whatever may have been the more remote causes, or whatever other invisible intermediate circumstances

in the constitution, or the part, there may be, antecedent to the excessive momentum which we perceive.

“ Neither will this conclusion be invalidated, were it even proved, according to the opinion of Dr. Wilson,* that the velocity of the blood in the vessels of an inflamed part is diminished; unless it be also proved that the velocity is diminished in a greater proportion than the quantity is increased.

“ I have been the more minute in my attempts to establish the quality and order of the phenomena on this important subject, because the principle will serve to illustrate various other diseases, which have hitherto been considered as very different in their natures, and therefore as leading to very different practices.

“ It having been thus proved, I think satisfactorily, that excessive momentum of blood exists, and is an invariable cause, in certain distinct cases, of that series of phenomena to which we give the abstract name inflammation; we have a right, conformably to the laws of sound philosophy, to conclude that it exists, and is a cause in all.

“ That the morbid dilatation of the vessels (in inflammation) is the mere mechanical effect of general increased impetus, I am by no means disposed to assert. On the contrary, I have endeavoured to show above, that the fulness, constituting part of the local momentum, often accompanies a dilatation of vessels arising from causes apparently merely acting on their own tonicity, without any increase of the *vis a tergo* from the heart; and even that the increased action of the heart often follows, instead of preceding the excessive local dilatation. All, however, which, on this occasion, I am concerned to show is, that increased momentum of blood in a part is essential to local inflammation; and that inflammation may arise from general increased impetus, although it sometimes occurs without it.”
P. 84—86.

We believe the term proximate cause is pretty nearly dis-

* Dr. Wilson Philip of Worcester is here meant.

carded from modern nomenclature: the following observations are both just and ingenious; affording at the same time a pretty good specimen of the author's habitual tone of reasoning:—

“ To the conclusion thus formed, respecting the cause of inflammation, it may be objected that this cause certainly cannot be the proximate, since it has been admitted that excessive momentum is not always or immediately followed by inflammation; whereas, according to the usual definition of proximate cause, it is that without which the disease cannot exist, and which existing, the disease must exist also. To this I answer,

“ First, that, according to this definition, the proximate cause is, strictly speaking, a part of the disease; which implies the absurdity, that a thing is the cause of itself.

“ Secondly, the very name *causa proxima*, or that which is nearest to any thing, shows that it cannot form a part of that thing; unless we admit that a thing can be at the same time a part of another, and not a part of it.

“ Thirdly, Causation, according to all our conceptions respecting it, implies not only difference and separation, but also priority. This definition of proximate cause, therefore, involves the farther absurdity of being at once prior to an effect, and co-existent with it.

“ In reality, on various other occasions, we consider as the proximate cause of a disease that phenomenon or process, which, according to our perception or conclusion, is next before those which appear to us to constitute the disease; whether the disease invariably follow that phenomenon or process, or not. Thus, the absorption of bile is said to be the proximate cause of jaundice, because without it there could be no jaundice; although we know that bile is every day absorbed into the circulation, without producing that disease. In all cases, effects must depend on the degree or force of the cause.” P. 90.

Dr. Parry is of opinion that inflammation, when it arises

from a constitutional cause, as in gout, erysipelas, and the like, is a natural and salutary effort of the system to remove a certain fulness of habit incompatible with the right performance of the healthy functions of that individual constitution. He relates many examples, where, if the habitual paroxysm of gout did not appear, or if it was intercepted or repelled by medical treatment, diseases of a worse character appeared in lieu of it, or perhaps unexpected death took place, from the overloaded vessels suddenly giving way in the brain, or in the parenchyma of some other vital organ.

There can, we presume, be but one opinion, that all the terminations of inflammation, with the exception of resolution, act as evacnants of the general system. Dr. Parry goes somewhat farther, and maintains, that it is solely by the evacuating effects of these various terminations, that the general and local momentum of blood are removed, and the disease cured. In this way, he shows that the effusion of serum, the extravasation of blood itself, the secretion of pus, or the exudation of coagulable lymph or of albumen, are all modifications of that salutary process of depletion expressly designed by nature for remedying the previous evil. But although one or more of these processes always occur, and although they relieve the part affected, it does not necessarily follow that they restore the general health. On the contrary, it often happens that the means which, according to the laws of animal life, cure the disease, kill the patient. Thus, though expectoration tinged with blood indicates a favourable termination of pneumonia, a larger effusion of the latter fluid into the parenchyma or air-cells of the lungs, often proves fatal. Thus, also, effusion of serous fluid into the cavities of the brain, always proves fatal, though by it the existing inflammatory action is terminated. Yet, notwithstanding these, and the like unfavourable instances, we are satisfied the process in question is beneficial in a great majority of instances, and that the theory of the curative principle is just.

Among the effusions from inflamed vessels must be enumerated a certain cream-like matter, whose chemical qualities, we

believe, never have been ascertained with accuracy, though it is often thrown out in gouty and other inflammations. The author conceives, that when this substance is inspissated, by absorption of its thinner part, it forms chalk-stones, pulmonary concretions, ossifications, and so forth ; all of which ought to be regarded as varied deposits from inflammation, acute or sub-acute.

We are constrained to pass over many valuable observations in the account of the phenomena and consequences of inflammation, in order to follow the author into his general considerations on dropsy and hæmorrhage, which come next in the order of discussion.

Having before proved that effusion of serum is a frequent termination of inflammation, he goes on to investigate still more closely the relation between the hydrophic and inflammatory states ; and from a variety of very illustrative facts, which our limits will not permit us to notice, he makes it appear that œdema, anasarca, and the other forms of dropsy, generally result from such a state of the sanguiferous system, as plainly indicates increased impulse, though that impulse may not be sufficiently exalted to produce local inflammation. Thus, the œdema following scarlatina, gout, or erysipelas, is the effect of the high phlogistic diathesis reigning in the system at the time.

“ It is worthy of attention, that dropsy is often evidently produced, and, when existing, aggravated, by many of those circumstances which are known to increase the momentum of the blood. Thus, ascites and anasarca often follow hard drinking, though there be no disease of the heart or liver. So also anasarca is frequently caused or increased by hot weather and hot clothing. Nay, I have often seen, in anasarca of the lower extremities, the leg which was nearest the fire swell more than the other. On the contrary, such swellings are diminished by external cold.” P. 146.

Dr. Parry considers dropsy, whether partial or general, to

be, like the terminations of inflammation, a salutary effort in the constitution to restore the balance of the circulation, and relieve such a determination of blood as is excessive, with regard to the whole, or part of the system; or excessive in relation to the accidental constitution of the person who is the subject of the malady. No doubt, in this, as in the former case, the salutary effort may prove fatal either by the extent or the site of the effusion, and yet the general salutary principle be unquestionable.

He altogether denies diminished absorption as a cause of dropsy, an opinion in which we feel compelled to differ from him. We readily admit that, in by far the greater number of cases, this disease is the effect of increased exhalation, caused either directly by increased momentum in the arterial system, or indirectly by diseases of the liver, lungs, and heart, impeding the free return of the venous blood, and thereby imposing a burden or *renixus* on the extreme arteries. Yet we firmly believe, that after protracted fevers, or other debilitating causes, a deficiency of absorption actually does occur, partly from torpor of the whole lymphatic system, and partly from the impaired tonicity or contractility of the cellular texture throughout the body, by which, when not impaired, the circulation in the *vasa minima* is so greatly promoted:—to say nothing of the yielding state of the capillaries themselves, under such circumstances.

However, we subscribe, in the main, to the correctness of Dr. Parry's views of dropsy, and regard it as no mean triumph of modern pathology, that this disease is removed from the class *Cachexiæ*,—that it is no longer considered as the product of depraved solids, but as a disorder of the sanguiferous system. The researches of Dr. Blackall, a few years ago, and the existence of albumen in the urine in many cases of idiopathic dropsy, have opened the minds of the profession to a belief of its general alliance to inflammation; and the labours of Dr. Parry will doubtless contribute greatly to the same end.

Hæmorrhage is considered to be the effect of the same ge-

neral cause as inflammation and dropsy: and a mass of valuable observations is furnished to prove, that, in both the active and passive kinds of hæmorrhage, there is increased impetus of blood; that is to say, that in the active hæmorrhage the momentum is positively excessive, whereas in the passive form the excess is only comparative, in relation to the resisting power of the capillaries and exhalents in any given case.

When these three diseases are spontaneous, they often act vicariously for one another, and tend equally to alleviate some constitutional errors of the general circulation. This general resemblance of action and of effect, the author regards as another proof of the near identity of cause in the three diseases. The following practical deductions from the reasonings just stated, deserve the deepest attention, considering the extensive opportunities of observing such cases, which Dr. Parry, from his local situation, has enjoyed. Our own experience in these matters, so far as it goes, exactly coincides with his.

“ So also with regard to certain hæmorrhages, many persons receive a great alleviation of various complaints, such as occur from defect of gout, by a bleeding at the nose, or a hæmorrhoidal discharge. Nay, examples have occurred, in which a patient, accustomed to vernal gout, and missing the usual fit, has had erysipelas,—the next spring hæmorrhoids, and the following spring a fever, cured by blood-letting; each with equal relief to the constitutional symptoms.

“ So, also, on various occasions, not only local disease, as before mentioned, but increased action of the heart, is relieved by dropsical effusions. Thus, even in hectic fever, I have seen a pulse habitually reaching 120 or 130 in a minute, reduced in a few hours to 60, by the supervention of violent anasarca in the lower extremities.

“ This point, (viz. the salutary effect of dropsical effusions,) like a great number of others in pathology, is of the highest importance, not only in speculation, but as it directs or sanctions modes of practice so active, that they must be either es-

entially beneficial on one hand, or highly injurious on the other.

"The coincidence of hæmorrhage with dropsy is by no means of frequent occurrence. It does, however, occasionally, under different forms, exist. I have seen a long continued and large hæmorrhage from the lungs, accompanied with hydrothorax, anasarca, and ascites, and with a pulse of 136 in a minute. All were relieved together, and the patient was restored to health, as soon as, by digitalis, the pulse was reduced to 40 in a minute." P. 170, 172.

With regard to sea-scurvy, as one of the varieties of passive hæmorrhagy, Dr. Parry puts it as a query, whether there may not, at a certain period even of that disease, be evidence of such an excessive momentum, as may ultimately produce those effects, both on the solids and fluids, which are recorded as characteristic of that disorder. On this subject we are enabled, from experience, to remark, that scurvy is produced, not merely by too long confinement to salted victuals, but by the use of aqueous, unwholesome, and unnutritious diet, of whatever kind: nay, we are ready to believe that it is chiefly, if not solely, by the defect of the nutrient principle in meat that has been long salted, that the latter produces the disease. Now, it is obvious that these circumstances are very unfavourable to the assumption of increased impetus of blood, either general or partial. We look upon this disease as rather proceeding from an atony of the extreme vessels, which renders them partially incapable of resisting the usual impulse of their contents. The martyrs to the complaint are chiefly those subjects in whom we should expect such an atony to occur; namely, persons who are slothful, dirty, and leucophlegmatic; whose skins are tabid, and whose gastric functions are disordered from want of cleanliness, of fresh air, and of exercise. We are satisfied, also, that the condition of the mass of blood itself is altered in scurvy. Of this, however, we shall say more hereafter.

We have heard from some persons, on whose judgment we

are disposed to place great reliance, of the efficacy of blood-letting in scurvy ; but we have very great doubts as to the expediency of that practice ; though we are at no loss to conceive how it would lessen, or even prevent, the subcutaneous ecchymoses.

On that portion of the work of which we have already given an account, we can safely bestow almost unlimited commendation. Besides the rich record of facts and observations with which it is stored, the views of pathology are enlarged, comprehensive, and, we have no doubt, founded in truth. The next portion, however, consisting of nearly 60 pages, in which the author treats of simple excessive determinations of blood to the cutis, to the uterus, prostate and thyroid glands, to the kidneys, liver, spleen, and muscles, and to the mucous membrane, has rather a hypothetical air about it ; and the strain of illustration is far from being either precise or satisfactory. We, therefore, willingly pass it altogether, and proceed to the part next in succession, where " the nervous constitution " is treated of.

To this part of the discussion the author prefixes an account of the structure of the brain and nervous system, drawn up in that rapid and dense style for which the work, almost throughout, is so conspicuous. In the description, he, for the most part, follows the method of Dr. Spurzheim, on whose anatomical investigations he passes several high encomiums. Next follows a chapter on the mental faculties, which we shall also pass over.

After some observations on the effects of the mind and the passions on the sanguiferous system, and on the various secretions, in which we find a great deal of ingenuity, but little novelty, the author lays down a position that, in the present probationary state of mankind, irritations and pains of body and mind are useful to our well-being, by keeping up, as it were, a constant call on the excitability of the brain, and hardening it, by the effect of habit, against various impressions both from without and within. Whence it follows, that those who, by sedentary or recluse occupations, are exempted from these

irritations, acquire a great susceptibility of the nervous system, and a liability to inordinate motions from slight causes, owing to the excitability of the brain being permitted to accumulate.

In this way a predisposition to diseases usually called nervous is established. But the causes just mentioned are not confined in their action to the brain itself, as the ultimate organ of sensibility, but, through it, influence the heart and circulating system, which, in their turn, react upon the brain, and become a concurrent cause of the augmented nervous susceptibility. Nay, Dr. Parry is inclined to believe, that the exemption from pains and irritations above referred to, acts primarily on the sanguiferous system; and that the brain suffers only secondarily, or by implication. He says,

“For the sake of illustration, let us suppose, that, from indolence and other causes, the heart has acquired an excessive morbid irritability. In this case, any impression communicated to it from the brain may excite in it inordinate action, which, determining the blood with excessive violence to the brain, may cause it to react on various other parts, and thus produce the phenomena of nervous diseases.” P. 295.

By reasoning somewhat analogous, he goes on to demonstrate, that irritation in the brain, from sanguineous impulse, produces excessive sensibility to external impressions, headach, vertigo, insanity, convulsions, delirium, epilepsy, hysteria, hypochondriasis, tetanus, sopor, catalepsy, &c.—all of which, he thinks, are but modifications of effect from one common cause.

“From what we are able to observe of the effects of different gradations of irritation or impulse on medullary substance, in living animals, whether of brain, spinal marrow, or nerves, we see that a certain degree of it produces pain or uneasiness, which is often propagated onwards in the course of the medullary branches. This, I think, is the origin of the aura epileptica, which begins in the brain. A greater effect is more or less of convulsion. An increase of impulse, amounting to

pressure, abridges the capacity of sensation and voluntary motion. The greatest impulse of all, wholly destroys that of both. This is precisely analogous to what happens to the parts dependent on the spinal marrow, from the various degrees of irritation or impulse which are the usual causes of paraplegia." P. 361.

He attributes to the lowest degree of increased momentum that sleeplessness, and certain other uncomfortable sensations, which must be familiar to such of our readers as are in the habit of largely consuming "the midnight oil" in protracted study :

" 'There is a state, in which, without any bodily uneasiness, ideas pass quickly through the mind, and compel a degree of attention absolutely inconsistent with nocturnal sleep. This state is apt to be brought on by excessive bodily or mental exertion, by anxiety, by late hours, hot rooms, and by spectacles, which combine the two latter causes with long-continued attention, much sitting in a confined place, and a frequent succession of objects which dazzle the eyes. It is usually accompanied with increased action of the heart ; the feet are often cold, and the pulse in the carotid arteries is preternaturally strong. Under these circumstances, sleep has been, on numerous occasions, induced by lying on one side, and making with the thumb a firm compression on one carotid artery.' " P. 298.

As a farther confirmation of his general doctrine, the author instances epilepsy, which, he thinks, may be regarded as a good specimen of the whole tribe of nervous diseases, seeing it unites in itself the characteristic symptoms of almost all of them. The attacks of this malady are always brought on by causes that excite the force and rapidity of the circulation, such as, vehement exercise, exposure to the sun, excesses in food or drink, *venus nimia*, &c. &c. Its paroxysms are often caused by palpitations of the heart arising from disagreeable smells, fear, surprise, and so forth ; nay, the author even

doubts whether palpitation be not a prelude to the fit in most cases; although, in many, the approach is so rapid, that the true series of symptoms eludes or escapes observation.

The sopor consequent upon each fit, he believes to be mere collapse, or debility of the brain, produced by long continued or excessive irritation from violently impelled blood. In fact, the brain often seems to be so exhausted, that the sopor remains, while the over-impulse continues. Where exostoses or other organic diseases within the cranium are found in epileptic cases, after death, Dr. Parry believes them to have operated merely as circumstances giving predisposition to the paroxysms; for as the latter are still periodical, notwithstanding the organic changes, it is to be concluded that sanguineous irritation continues to be the proximate cause.

We may observe that this view of epilepsy does not take into account, nor attempt to explain, those cases that arise *sympathetically* from dentition, worms, or other irritation in the primæ viæ, or from diseases of the spinal cord.

Insanity, Dr. Parry divides into moral and physical; the first originating in purely mental causes, the last in disordered circulation, or some other disorder of cerebral structure. In many instances, the former evidently superinduces the latter; were it not so, insanity from moral causes would subside with those causes, and in time cease spontaneously. In this view of the subject, we perfectly agree with the author. That mania, from whatever predisposing circumstance it may proceed, is either primarily an organic affection of the brain, or ultimately becomes so, is proved by its analogy with other diseases, in which we generally observe that the disturbed function of any organ, if not already the effect, soon becomes the exciting cause, of impaired structure; and it is farther demonstrated by mental alienation being so very rarely susceptible of cure except at the outset. Yet we cannot agree with the author as to momentum being an invariable cause of this disorder, though doubtless it is a very common one. It was probably such a sweeping opinion that led to the disgraceful routine of practice that formerly obtained in some lunatic establishments,

where patients were punctually bled and purged in the gross, on certain stated days, whatever might be the type of their respective hallucinations, or the state of their bodily health ; and were confined to the lowest diet, while a regimen of nearly an opposite nature, united to judicious moral treatment, was indicated. This opinion, too, takes no account of those causes of insanity that are situated in the abdominal viscera ; yet depraved conditions of the digestive organs are often known to propagate, as from a morbid centre, a host of diseased impressions that act sympathetically on the brain, and in some unknown way derange its sensorial functions.

Many interesting remarks follow on hypochondriasis, febrile delirium, and spectral illusions : but our limits will not afford room for an abstract of them.

Paraplegia and sciatica are traced to increased impulse of blood on the spinal cord, and to undue vascularity of the sheath investing the sciatic nerve at its origin. The pain or numbness in both these cases is felt in the limbs, though the seat of the disease is higher up ;—on the same principle that we feel a tingling pain and numbness in the little finger from a blow on the ulnar nerve at the elbow.

“ To this head, also, may probably be referred that painful disorder called *Tic Douleureux* ; which seems to occupy the extreme ramifications either of the facial nerve, or of the second (or superior maxillary) branch of the trigeminus. All the circumstances induce me to attribute this pain to increased vascularity or determination of blood (perhaps amounting to inflammation) to the neurilema or vascular membranous envelope of those nerves. I form this judgment, first, from the strong analogy which the case itself bears to those before mentioned, in some of which dissection has demonstrated the cause : Secondly, from the extension of the disorder to the branches of more than one nerve in the same patient, which can scarcely be produced but through the medium of common blood-vessels ; since there is no evidence to prove the extension of pain, by pure sympathy, to anastomosing branches of

nerves derived from different trunks: Thirdly, from the disposition in this pain to be increased or diminished by those means which increase or diminish the motion of the heart: and, lastly, from the resemblance of curative effect produced on it, in common with those diseases which evidently arise from excessive sanguineous determination, by certain remedies, such as abstraction of heat, eau medicinale, and arsenic." P. 365.

Our own experience in this disorder countenances the above speculation. Dr. Parry ascribes the relief often obtained by a surgical operation to the division of the arterial branch, and the consequent local evacuation of blood; and not to the division of the nervous twig.

Upon the whole, though the facts here stated about nervous diseases are numerous, curious, and edifying, we cannot allow ourselves to admit the author's opinions in their full extent. We think he ascribes too much to sanguineous impulse, and too little to the constitution of the nervous system itself. By observation, we know, that a number of causes acting directly on that constitution, and not through the medium of the circulation, are capable of instantly destroying the nervous influence, and thus producing death. Amongst such agents, the most conspicuous are sudden bursts of grief, the electric fluid, carbonic acid, the carburetted hydrogen, and perhaps others of the deleterious gases, and some animal and vegetable poisons.

Next follows some important pathological information on the relation of diseases to one another; 1st, by extension; 2d, by remote changes; and, 3d, by conversion. By the first is meant, where a disorder extends itself, under a different name, to other parts at the same time. In such cases, we ought to consider the disease itself, and its new modification, to be merely an extension of sanguineous momentum to different and even remote branches of the same arterial trunks. Thus the author accounts for the pains in the thighs and feet, and the distressing cramps in the calves which often accompany cholera, diarrhœa, and other determinations to the bowels. In

this way, also, he accounts for a brisk purgative, during a gouty diathesis, often producing acute inflammatory gout in the knees or feet; for sciatica being aggravated by cathartics; and for that heat of the head, and redness of the face and eyes, which accompany the whole train of nervous disorders, &c.

Under the 2d head are included those morbid states, which, having affected one part at one time, are apt, in the same person, to affect another part in a new form, at a subsequent and somewhat distant season. As exemplifying this, the author cites instances, where the same patient, at different periods, shall have hæmorrhoids, headach; vertigo, erysipelas, or gout; and, on the other hand, where constitutional disposition to one or more of these affections shall end in epilepsy, hemiplegia, and apoplexy, or other diseases of increased excitement.

“ In one patient, the succession, at somewhat remote periods, was gout, mania, and, at last, fatal epilepsy.

“ In another, gout, epilepsy, and long continued mania.

“ In several instances, I have seen fits of epilepsy wholly superseded by those of gout.

“ In another case, the succession was epilepsy, gout, and fatal asthma.

“ In a gentleman, who was for many years a very intemperate liver, gout, to which he was long subject, entirely ceased after a glandular abscess in the neck, followed by a great discharge.” P. 376.

On the 3d head, or the conversions of disease, we believe nothing systematic had been written; and we think medical science is greatly indebted to Dr. Parry for taking up a subject so important, and yet so little understood. The facts here stated will tend to overawe that unscientific rashness by which the generality of practitioners are ever ready to check or cure, if possible, every complaint that comes in their way, without due regard to the ultimate effects on the constitution. We shall select some prominent examples of this conversion, in which the successive phenomena were only

different phases (so to speak) of the same constitutional malady.

“ In a gentleman, the pain of a node on the shin, supposed to be venereal, alternated with vertigo, and the sense of numbness in the head.

“ A headach, of some years duration, subsiding, was followed by a cough, accompanied with incessant and wasting hectic fever. After the man had long been confined to his bed, and death was every day expected, the headach began slightly to return; and, as it became established, the cough and fever receded, and the patient regained his flesh, but continued subject to headach as before.

“ In a gentleman long accustomed to violent vertigo, or pain in the head, these affections were constantly relieved on the coming on of œdematous swellings, without inflammation in the legs and feet.

“ In another, an eruption of red papulæ always alternated with sickness and vertigo.

“ On the other hand, various diseases of the head, as headach, vertigo, depression of spirits, mania, epilepsy, and apoplexy, in many instances, either immediately or soon, succeed the recession of inflammatory gout from the extremities.

“ In a clergyman, slight gout receded, and was followed by a small discharge of blood from the rectum, which ceasing, was soon succeeded by fatal epilepsy.

“ In a lady, a violent coryza was immediately removed by an epileptic fit.

“ Another, on the going off of fluor albus, under which she had long suffered, was immediately seized with pain and weight in her head.

“ As catarrhs recede, they are frequently succeeded by breakings out on the lips or lower part of the nose.

“ The alternation of cutaneous eruptions, with different forms of dyspepsia, is common and well known.

“ I have seen hæmorrhage from the kidneys immediately succeed the desquamation of the measles.

“ The disappearance of scarlatina is often followed by the succession of more or fewer of the following symptoms: bloody urine, arthritis, œdema of the extremities, ascites. To which may be added, in one instance which I have seen, convulsions, and, in another, epilepsy.

“ An old man, who had lived freely, had a chronic inflammation of one leg, accompanied with œdema. Both were greatly relieved by the application of a tight bandage. In a few days, he was, for the first time, seized with violent epilepsy.

“ In two cases, which occurred between twenty and thirty years ago, immersion of a gouty foot in cold water, which produced instant relief of the pain, and a proportionable abatement of the inflammation, was, in a few hours, followed by hemiplegia.” P. 380, et seq.

• The author conceives that these facts, (which, with many others of the same import, are drawn entirely from his own experience,) besides their importance in medical practice, reflect great light on the cause of diseases; for he contends, and we think with much justice, that the several forms of disorder above enumerated are vicarious affections, consisting of different modifications of one common action, (he says increased momentum,) directed, from unknown and spontaneous causes, to different parts.

Upon the whole, this augmented momentum he considers to be the essential link in the chain of causation in nearly all diseases; except, of course, such as take their origin from mere mechanical causes, contagion, or vegetable miasmata. We have then the following digest of his preceding opinions:—

“ First, excessive determination or momentum of blood to the skin, produces sweating, scarlatina, measles, erythema, erysipelas, and all the forms of eruptive diseases.

“ Secondly, to mucous membranes,—Coryza, catarrh, hooping-cough, croup, sore-throat, peripneumonia notha, catarrhus senilis, bronchitis, asthma, aphthæ, dyspepsia, diar-

rhœa; and various other disorders of the villous coat of the alimentary canal; strictures in the urethra, œsophagus, colon, and rectum, gleet, fluor albus, catarrhus vesicæ.

“ Thirdly, to serous membranes,—Phlegmon, pleurisy, pericarditis, peritonitis of different parts, constituting entiritis, puerperal fever, &c.; inflammation of the tunica vaginalis testis. To synovial membranes, producing arthritis; together with the effects of these several states, anasarca, hydrothorax, hydropericardium, ascites, hydrocele, effusions into joints, adhesion, anchylosis, &c. &c.

“ Fourthly, to various other membranes.—Of the spinal marrow or nerves,—paraplegia, sciatica, tic douloureux, &c. To the epithelion, deafness.

“ Fifthly, to glandular parts,—Cynanche parotidæa, or mumps; swelling and other disorders of the thyroid gland, mammæ, testicles, prostrate, and various other glandular parts; phthisis pulmonalis, atrophy.

“ Sixthly, to the head,—Headach, vertigo, sleeplessness, common nervous affections, mania, delirium, convulsions, hysteria, epilepsy, catalepsy, inflammation of the pia mater, or arachnoides; together with their occasional sequelæ, hemiplegia, apoplexy, hydrocephalus, and other effusions.

“ Seventhly, to other parts in various forms,—Peripneumony, enlargement of the heart, liver, spleen, kidneys, testicles, and uterus, with or without inflammation; fungus hæmatodes, ophthalmia, cataract, amaurosis.

“ Eighthly, various increased natural discharges, not already specified,—Ptyalism, diabetes, lachrymatio.

“ Ninthly, morbid depositions, not above arranged,—Scirrosities, indurations, ossifications, chalk-stone, biliary and renal calculi, and other hard deposits in different parts.

“ Tenthly, hæmorrhages, from serous, mucous, or other membranes, or parenchyma; as from the nose, uvula, fauces, lungs, stomach, intestines, kidneys, bladder, uterus, vasa deferentia, skin, liver, &c. To which may be added the various forms of purpura.” P. 398, &c.

The disorders considered to arise from the opposite state, viz. defective determination of blood, are, shrinking of muscular parts, extenuation and flaccidity of the parietes of the heart, amenorrhœa, constipation, syncope, and atrophy without fever.

The concluding part of the work, consisting of fifty pages, is occupied with "Exemplifications of salutary processes;" and may be considered a sort of appendix to the evidence adduced throughout the work of a tendency in the constitution to relieve itself from various irritations, either by some topical outlet, or general means of reduction. In this chapter, as usual, great ingenuity is displayed, and many valuable facts are brought forward. We regret that our narrowing limits permit us to do little beyond alluding to, and recommending them.

The effect of exercise, and of various other motions, voluntary or automatic, is exerted primarily and principally on the circulating system. These motions tend to drive forward the blood in the veins, and thus promote a free and equable distribution of that fluid throughout the system at large. The author judiciously adds:

"It is easy to see how different the operation of these causes is from that of wine, heat, full meals, certain passions, and various other stimulants; for while these, for the most part, cause the heart to produce an inordinate momentum of blood in the several branches of the arterial system, and more especially of the head, while the venous system is only secondarily and imperfectly acted on, bodily exercise, on the contrary, urging forward the blood in the veins, admits of a ready evacuation of arterial blood into these channels; just as opening a vein, produces a quicker determination of blood from the neighbouring vessels to the wounded part." P. 416.

Among the instinctive efforts to restore the healthy balance of the circulation, and which, by consequence, should be esteemed salutary processes, the author includes shivering.

convulsions, coughing, vomiting, shrieking, weeping, laughing, &c. by all, or at least some, of which epileptic and hysterical paroxysms are generally introduced or accompanied. But on these points we cannot help regarding his opinion as not a little visionary, and his reasoning as highly inconsequential.

Notwithstanding the length of our preceding extracts, we must yield to the temptation of inserting the following passage, as it contains a useful lesson against that "*nimia cura medici*,"—that pragmatistical intermeddling spirit, which we before spoke of. The votaries of *eau medicinale* and colchicum will find their account in laying it to heart.

"If the representation, which has thus been given, be just, we can well understand why many local diseases cannot be removed, or even, in a certain degree, checked by local remedies, without the hazard of converting a topical into a more general malady, or of causing a constitutional effort on some other part; which part may be more essential to life, than that which the attempt was made to relieve.

"The same evils may attend the administration of certain internal remedies, the tendency of which is not to cure the constitution, and so remove the necessity of the local disease, but merely to check the present salutary action of the system, and thus to cause only a temporary and delusive suspension of present suffering. Such, in the far greater number of instances, is precisely the action of the *eau medicinale* of Husson; the injurious and even fatal effects of which, local circumstances give me peculiar opportunities of witnessing." P. 451.

Such are the elements of Dr. Parry's pathology. We thought it best, for perspicuity's sake, to give a continuous outline of the whole at once, with as few critical interruptions as possible. Our strictures on the system at large we have reserved for this place, and we now venture to submit them to the judgment of our readers.

I. Our chief objection to the system, then, is its extreme simplicity. It may seem hyper-critical to impute that as a

fault, which is generally considered as so high a recommendation; yet, whatever may be the merit of simplicity, in the abstract, we are satisfied that no system, which has this for its basis, can explain satisfactorily the origin and phenomena of diseases. Nature may be simple in her ends, but in the means employed to achieve them, she seems to be sufficiently complex. As general health does not consist in the right performance of one function only, or the due action of any solitary system, whether arterial, venous, absorbent, or nervous,—but rather in the general harmonious balance of all; so neither does idiopathic disease consist in the derangement of one function or texture, but in the greater or less disturbance of the whole animal machine. Consequently there cannot be, as Dr. Parry maintains, one common origin of all diseases, any more than there can be one universal remedy for them.

An eager spirit of generalization is the error of almost all powerful minds, and, with its usual result, hypothetical simplicity is productive of much detriment, when applied unreservedly to a science so complex as the philosophy of life. A slight glance at the revolutions in medical doctrine, will convince us how much both physiology and pathology have been hitherto retarded in their progress by the excessive love of system, and the adoption of some one principle or agent to the exclusion of all others. In physiology, that assemblage of phenomena which, by a compendious form of expression, we denominate *Life*, has been ascribed in one age to a *Φύσις*, or native occult virtue, in another to an *Archæus*, in another to elemental fire (*εμφατον πυρ*); in others, and more modern ones, to a moving principle,—a subtile and mobile matter,—a nervous fluid, a vital principle,—an electric or galvanic aura, and so forth. The belief in these marvellous and invisible energies, (which in reality explain nothing,) has prevented the phenomena of life from being received as ultimate facts, and its laws from being studied in their details; and thus has, perhaps, perpetuated our ignorance from century to century. For had these details been entered upon analytically, and the inductive method rigorously followed, it is to be presumed, that

the accumulative labour of past ages would, by this time, have secured to animal physiology a higher rank among the natural sciences, than it actually possesses at this day.

In pathology, also, who can forget the dogmatism of the Methodics, the obstinacy of the Galenists, the ravings of the Chemists, and the boastings of the Mathematicians,—all toiling at their favourite theories, and respectively teaching narrow and exclusive doctrines of disease? These doctrines have had their day, and have successively mouldered away under the silent touch of time; and, from what we know of the past, we can scarcely venture to predict that Dr. Parry's all-pervading "momentum of blood" will fare better, as a *universal* cause of disease, than the *χολη* of Hippocrates, or the *Pituita* of Galen,—the fermentation of the Arabians, the viscidities and lentor of the humoralists, or the lemmas of the mathematical physicians. We are very far from maintaining that increased or diminished impulse of blood is not a most important principle in pathology: we say only, that the author has carried it too far, and has weakened a good cause by trying to prove too much.

2. We object to our author's disregard of the nervous system, and to his assigning it only a subordinate influence in the causation of diseases.* We cannot consent to receive a doctrine which exalts the sanguiferous system as all in all: because we are satisfied that, though the nervous and circulating organs are, as to their inherent powers, independent of each other, they are nevertheless associated in the most intimate relation, and exert the closest mutual influence. Nay, we think, it might be urged against Dr. Parry, with arguments at least as plausible as his own, that the nascent movements of all diseases depend upon the sentient system; and that, even in in-

* Our author's language is more than sufficiently strong: he "utterly, and forever, disclaims all reliance on the neurological systems of pathology hitherto extant. He considers them as founded on principles, which are either visionary or inapplicable, and which lead to practices, tending equally to debase the moral character of mankind, to produce, or perpetuate, disease, and to discredit the medical profession." Preface, p. 5.

flammation, (the least questionable example of sanguineous momentum,)—the primitive excitation, or morbid impression, is always exerted upon the nerves of the part, and that determination of blood follows only consecutively, according to the well known law, “*Ubi irritatio, ibi fluxus,*” &c.

To be sure the author, either with the view of modifying his doctrine, or of obviating objections, admits that there may be invisible intermediate circumstances in the constitution, or in the part, subsequent to the application of the remote causes, and antecedent to the excessive momentum of blood which we perceive. But, notwithstanding all such circumstances, he still chooses to consider the increased momentum alone as the essential cause. Now it appears to us, that, according to this reasoning, morbid heat might be assumed as the essential cause of fever, or yellowness of the skin as the cause of jaundice, seeing that, in these diseases, heat and yellowness always precede the lesser phenomena; and unless they appear, (whatever may be the other invisible intermediate circumstances,) no fever or jaundice can truly be said to exist.

But we wave these matters as entirely speculative, and pass on to an opinion of the author, (advanced in aphorism 97,) that the function of secretion is an attribute of the circulation, accomplished by an innate power in the vessels of electing or rejecting certain elements of their contained fluid, red or colourless. This opinion is surely untenable; for it is proved by the experiments of all modern physiologists, and particularly by those of Dr. Wilson Philip, that secretion, more perhaps than any other organic process, is under the direct influence of the nerves.

3. We find throughout Dr. Parry's work a total disregard and neglect of the lymphatic, glandular, and absorbent system. There can be little doubt that, in many diseases, both acute and chronic,—but particularly after measles, scarlatina, &c. there exists a general torpor of that system, which modifies greatly all the other symptoms.

4. Admitting, for argument's sake, the author's general doctrine to be true, we deem him somewhat blameable for con-

sidering merely the quantity and velocity of the blood, without attending to alterations in the quality of that fluid. This, to be sure, is a prevailing oversight with modern authors, so that Dr. Parry might here plead the authority of prescription. We are disposed to grant, without the least hesitation, that the humoral pathology of former times, like all other exclusive principles, was erroneous, from being carried too far. The consequence has been, that it has now fallen into utter, but perhaps unmerited, neglect. We are satisfied it had its points of merit, inasmuch as it directed to researches into the morbid conditions of the fluids, and especially of the blood. To despise such researches is certainly unwise; for this most important fluid undergoes very material changes of constitution in scorbutus and some other diseases.—changes, without which the symptoms cannot be accounted for. This subject, however, is too extensive to be treated of in this place.

5. Our fifth and last observation against the system is, that the author now and then reasons from slight or feeble analogies. Indeed, much as we admire his argumentation generally, we are constrained to say, that it is sometimes vague and unsatisfactory,—for instance, where he attributes to modifications of increased momentum complaints so different as spasmodic asthma, dyspepsia, diabetes, and fungus hæmatodes, diseases not only of dissimilar symptoms, but of dissimilar tissues.

It is one of Dr. Parry's fundamental positions, that most of those movements, constituting what is called disease, and which, for the time, produce disorder of the different functions, whether of body or mind, are, in reality, processes, the general tendency of which is to restore, and to prolong life. But of the general truth of this proposition, though doubtless it is correct in some cases, we entertain very great doubt, or rather actual disbelief. We are in the habit of thinking that the final cause of a great majority of the diseases incident to humanity, is to be sought for in the direct appointment of Providence; and that those diseases, like other physical evils, are intended to fulfil certain inscrutable purposes, both moral and natural: of the latter, perhaps, the only obvious one is, the re-

moval, from this stage of existence, of the successive generations of mankind, in order to make way for others ; and thus give effect to that law of *change* which rules the whole animated kingdoms of this earth.

Besides, the elements by which we are surrounded often excite disorders both painful and dangerous ; which, so far as we can judge by the event, are by no means productive of any indirect or ulterior advantage to the general constitution, but often, indeed, the very reverse.

Moreover, this doctrine of the salutary tendency of diseases is by no means new. It may be found laid down at great length in the writings of Stahl, who ascribed to the sovereign *anima* every phenomenon of health and disease, and assumed that every natural distemper was set in motion by that presiding principle, with a view to some benevolent purpose or change in the human system. Not only in this matter, but in the general doctrines about plethora, we think a considerable resemblance may be traced betwixt the pathological principles of Dr. Parry, and the now almost forgotten speculations of the celebrated advocate of phlogiston.

After having pointed out with such freedom what we consider the defects of this system, it behoves us to be no less explicit in pointing out its prevailing merits.

In the first place, then, we may notice the width and comprehensiveness of its principles, as giving it a just claim to pre-eminence. A system of satisfactory pathology must be founded on a view of the whole human economy, and not on the morbid appearances or deranged functions of single parts. So far Dr. Parry's answers to this description ; and though he has not succeeded—(who, in the present imperfect state of our knowledge, can hope to succeed ?) still he deserves the greatest praise for laying his foundation so deep, and for tracing to the pale of the circulation a number of perplexing and untractable disorders, hitherto not suspected to arise from that source. He has illustrated (at page 101, *et seq.*) the safeguards against inflammation which nature has instituted, in a manner at once original and beautiful.

In the second place, if candour required us to say that the work breathes too much the spirit of system, we are equally bound to acknowledge, that it breathes also the spirit of philosophy,—combined, too, with what is not less admirable in a physician,—a talent of acute and original observation. There are but few volumes that can display such a mass of compressed thought, and valuable practical knowledge. This, however, we have, in substance, said already.

The book defies all efforts at condensation, being already condensed to the utmost by the masterly hand of the author. The account we have given of it is but a very faint one;—nay, we fear, we must have done it great injustice, from our being obliged, for the most part, to quote only the conclusions, with little or none of the inductive reasoning by which they are premised. But we trust our readers will remedy the defect by studying the original, instead of contenting themselves with our brief analytic sketch.

The appearance of a system—particularly *such* a system—of pathology, is not an every-day occurrence: and this must plead our excuse,—if indeed any excuse were necessary,—for assigning to Dr. Parry's labours such an unusual number of our pages.

It is impossible not to lament, that the great undertaking, thus energetically begun, can, in all probability, never be completed by its distinguished author. That stroke of disease, which pays as little reverence to exalted intellect as to elevated rank, has unhappily paralysed the strength of his powerful mind, and prematurely quenched that fine glow of scientific enthusiasm—that resplendent genius which illumined whatever it approached. Who is there that does not sigh over the fairest attributes of man in eclipse—the touching spectacle of intellectual greatness in ruins?

DISTRIBUTION OF CALORIC.

Meteorological Registers are very useful in many respects. We are very apt to say this is the *hottest* summer, or this is the *coldest* winter. It has been said, very commonly, that the last summer was remarkably hot; but it is proved, by the following result of recorded observations, in *seven* positions, (differing in distance, from *north* to *south*, more than 600 miles, and from *east* to *west* more than 400,) that we have been mistaken. In four of these positions, viz. in *Wooster*, *Cincinnati*, *Huntsville*, and *Savannah*, the last summer was *cooler* than the summer of 1818. And the quantity of caloric for all the positions, is,

for 1818, 78 60

for 1819, 77 55

Wooster and Zanesville are higher above the level of the Atlantic than the other positions; they are also *cooler* than any other. Savannah, which is near the level of the Atlantic, has the highest temperature.

The quantity of *rain* for the summer, in the western country, generally, has been much less than usual. But, at Savannah, according to the accurate observations of A. G. Oemter, Esq. the quantity was about three times greater than in 1818. In June, July, and August last, at that place, fell 31.89 inches, which is more than falls in England in a whole year. The deficiency of rain in the west has not prevented an abundant reward to the labours of the field.

J. M.

General Land Office, Sept. 28, 1819.

	1818.			1819.			1818.	1819.
	June.	July.	Aug.	June.	July.	Aug.	Mean of Summer months.	
Wooster,	73 44	77 99	75 38	72 01	76 83	77 81	75 60	75 55
Zanesville,	72 73	78 04	75 85	74 15	75 17	77 53	75 54	75 62
Chillicothe,	74 42	78 53	79 21	77 09	76 58	80 24	77 39	77 97
Cincinnati,	75 13	78 87	77 37	74 05	74 12	77 34	77 12	75 17
Jeffersonville,	78 54	81 40	80 38	79 61	79 00	82 43	79 97	80 35
Huntsville,	78 83	80 75	84 05	80 84	80 74	79 27	81 21	80 28
Savannah,	82 53	85 08	82 54	77 51	78 08	78 17	83 38	77 92

UNIVERSITY OF PENNSYLVANIA.

The Medical Lectures will commence, as usual, on the first Monday of November.

Anatomy,	by Dr. Physick.
Practice of Physic, &c.	Dr. Chapman.
Midwifery, &c.	Dr. James.
Chemistry,	Dr. Hare.
Surgery,	Dr. Gibson.
Materia Medica and Pharmacy,	Dr. Coxe.

JOHN REDMAN COXE,
Dean of the Medical Faculty.

Philadelphia, Sept. 8, 1819.

UNIVERSITY OF THE STATE OF NEW YORK.

The College of Physicians and Surgeons of the University of the State of New York, will commence the annual course of Lectures, for the ensuing winter, on Monday, the 1st of November next, at the College, in Barclay street.

Dr. Hosack, on the Theory and Practice of Physic, and on Midwifery, and the Diseases of Women and Children.

Dr. Post, on Anatomy, Physiology, and Surgery.

Dr. Mackneven, on Chemistry and the Materia Medica.

Dr. Mitchill, on Natural History, including Botany, Mineralogy, and Zoology.

Dr. Hamersley, on the Clinical Practice of Medicine.

Dr. Mott, on the Principles and Practice of Surgery.

Dr. Francis, on the Institutes of Medicine, and on Medical Jurisprudence. By order,

SAMUEL BARD, M. D. *President.*

JOHN M. FRANCIS, M. D. *Registrar.*

New York, Oct. 1, 1819.

UNIVERSITY OF MARYLAND.

The Medical Lectures commence annually, on the last Monday in October.

Anatomy,	Dr. Davidge.
Theory and Practice of Medicine,	Dr. Potter.
Chemistry and Mineralogy,	Dr. De Butts.
Materia Medica,	Dr. Baker.
Surgery,	Dr. Davidge.
Midwifery,	Dr. Hall.
Institutes of Physic,	Dr. M'Dowell.

HARVARD UNIVERSITY.

The Lectures of the Medical Institution of Harvard University, will commence at the Medical College, in Boston, on the third Wednesday in November.

Anatomy and Surgery, by Dr. Warren.

Chemistry, by Dr. Gorham.

Midwifery and Medical Jurisprudence, by Dr. Channing.

Materia Medica, by Dr. Bigelow.

Theory and Practice of Medicine, by Dr. Jackson.

Boston, Sept. 25, 1819.

ANATOMY AND SURGERY.

DR. INGAL'S course of LECTURES will commence in Boston, on Wednesday, 17th November. Lectures on Chemistry will be given at the same time.

DR. GEORGE M'CLELLAN is preparing for the press, and will publish during the course of the ensuing winter, an *Essay on the Surgical Anatomy of the Arteries*.

GRANVILLE SHARP PATTISON, Esq. Surgeon, has been appointed Professor of Anatomy in the Transylvania University of Lexington, Kentucky.

ANATOMY AND SURGERY.


The following courses of Lectures will be delivered in Philadelphia, during the ensuing session, by Granville Sharp Pattison, Surgeon, late Professor of Anatomy, Physiology, and Surgery, in the Andersonian University, Glasgow.

Anatomy, Thursday, 4th November, 5 o'clock, P. M. every lawful day.

Surgical Anatomy, and the operations of Surgery, Tuesday, 9th November, 6 o'clock, P. M. every Tuesday and Thursday.

The above courses will be illustrated by the splendid Museum of healthy and morbid Anatomy, formerly belonging to the late Mr. Allan Burns, and since much enlarged by Mr. Pattison.

October 1, 1819.

 The figure of the *Monarda Punctata*, in this Number, was engraved from a drawing taken from a specimen of the plant not in flower.

INDEX.

ORIGINAL COMMUNICATIONS.

	PAGE		PAGE
ATLEE, Dr. E. A. relates a case of		Epidemic Fever of 1814-15, in	
Uterine Disease, - - - -	73	the "Northern Neck" of Vir-	
Aneurism, False, a case from		ginia, - - - -	28
Smucker, - - - -	74		
Archer on the Diaphoretic Vir-		Fever, Observations on, by Dr.	
tues of Sulphuret of Iron, -	66	Colhoun, - - - -	5
Action of Canine Virus on the		Fever, Epidemic, of the "North-	
Human Body, - - - -	339	ern Neck," Virginia, - -	28
Atlee on the Monarda Punctata,	496	Fogo's Paper on the Functions of	
Acid, Prussic, a paper on it, -	512	the Uterus, criticised by Dr.	
		Dewees, - - - -	14
Biography of Dr. Dorsey, - - -	1	Flagler's, Dr. case of Mania a Potu,	185
Batchelder's Dr. Medical Re-		Fletcher, Dr. J. on Tabes Mesen-	
marks - - - -	13	terica, - - - -	365
Bandage, for the lower jaw, -	154		
Barton's, J. R. New Bandage for		Gray, Thos. B. W. on the Epi-	
for lower jaw, - - - -	ib.	demic Fever of the "Northern	
		Neck," Virginia, in 1814-15,	28
Colhoun, Dr. makes Observations		Gloniger, Dr. J. relates a case of	
on Fever, &c. - - - -	5	Periodical Hæmorrhage from	
Cantharides, on their Emmena-		the male Urethra, - - - -	371
agogue Virtues, - - - -	37		
Cholera Morbus of Calcutta, -	162	Hall, Dr. T. M. on Cholera Morbus,	162
Carbonic Acid, its absorption by		on Carbonic Acid, - - - -	167
water, - - - -	167	Horner's, Dr. W. E. Memoirs of	
Colic relieved by cold effusion	170	Military Surgery, - - - -	313
Cathrall's, Dr. case of Double		Henderson, Dr. T. on Luxation of	
Hare-lip, - - - -	372	the Knee Joint, - - - -	357
Coates, Dr. R. relates a case of		Huntt, Dr. H. relates the case of	
Singular Arrangement of the		M. D'Onis, - - - -	366
Peritoneum, - - - -	506	Hare-lip, Double, a case by Dr.	
		Cathrall, - - - -	372
Dorsey, Dr. J. S. Biographical No-		Klapp, Dr. J. on Cantharides, -	37
tice of, - - - -	1		
Dewees's Observations on Dr. Fo-		Magaw's, Dr. case of obstinate	
go's Paper on the Importance		Colic, - - - -	174
of the Uterus, - - - -	14	Mania a Potu, a case of, - -	185
Drake on Temulent Diseases,	59	Mease, Dr. J. on Hydrophobia,	174, 337
Dewees on Dysmenorrhœa, -	155	Memoirs of Military Surgery, by	
Dislocation of the Knee Joint, a		Dr. Horner, - - - -	313
case by Dr. Henderson, - -	357	Mercurial Ointment, on the best	
of the Tibia forward,		mode of preparing, - - -	331
by Dr. L. Spalding, - - -	508	Macneven, Dr. W. J. relates an Ex-	
Dysmenorrhœa, a paper on it by		traordinary Case of Ptyalism,	510
Dr. Dewees. - - - -	155		

	PAGE		PAGE
Mead, Dr. Replies to an Article in the New England Medical Journal, - - - - -	279	Review of Drs. Gross and Gerardin's Report of the Yellow Fever at New Orleans in 1817, -	218
Periostitis, a case by Dr. Tyler, -	69	— of Parry on the pulse, -	386
Periodical Hæmorrhage from the Urethra, - - - - -	371	— of Ayre on Marasmus, -	390
Puerperal Convulsions, a case by Dr. Staley, - - - - -	500	— of Maclean's Practical Illustration of Medical Improvement during the last thirty years, -	390
Ptyalism, an Extraordinary Case, by Dr. W. J. Macneven, - - -	510	— of Thomson's Chemistry, -	405
Prussic Acid, an Essay on, - - -	513	— of Tracts on Medical Jurisprudence, - - - - -	424
Peritoneum, a Singular Conformation of it, - - - - -	506	Retrospect of the Improvement of Medical Science in the United States during the last thirty years, - - - - -	476
Rogers, Dr. P. K. on the Preparation of Mercurial Ointment, -	331	Sulphuret of Iron, its diaphoretic qualities, - - - - -	66
Review of Mott's case of Aneurism of the Arteria Innominata, -	78	Spalding, Dr. L. on the Anterior Luxation of the Tibia at the Knee, - - - - -	508
— of Dr. Spalding's Essay on Fever, - - - - -	82	Staley, Dr. on Puerperal Convulsions, - - - - -	500
— of Barton's Flora, - - - -	86	Temulent Diseases, a Paper on, by Dr. Drake, - - - - -	59
— of Chapman's Therapeutics, - - - - -	90	Tyler's case of Periostitis, - - -	69
— of Hosack's Nosology, - - -	102	Tabes Mesenterica, cases by Dr. J. Fletcher, - - - - -	363
— of Dr. Dewees's Essay on Difficult Parturition, - - -	193	Uterine Disease, a Singular Case, by Dr. Atlee, - - - - -	73
— of Dr. Cooper's Discourse on the Connexion between Chemistry and Medicine, -	206		
— of Westring's Observations on the Cure of Cancer, - - -	213		

FOREIGN PAPERS AND MISCELLANEOUS ARTICLES.

	PAGE		PAGE
Abercrombie on the Diseases of the Spinal Marrow, - - - -	115	Calculous Affections, Observations on, - - - - -	225
Archer's Successful Operation of Paracentesis of the Thorax, -	275	Cæsarian Operation, by J. J. Locker of Zurick, - - - - -	254
Air of the Cork Fever Hospital, Experiments on, - - - - -	271	Davy, Dr. Edmund, Experiments on the Air of the Cork Fever Hospital, - - - - -	271
Actual Caution, a Paper on its use as a remedy, - - - - -	449	Deoxidation of Indigo, - - - -	293
Arsenic and Corrosive Sublimate, Tests for, - - - - -	148	Deaths, Statement of in the City and Liberties of Philadelphia, from January, 1818, to January, 1819, - - - - -	
Brand on Calculous Affections, -	225	Febrile Origin, by Dr. Kinglake, -	263
Balfour Dr. W. on the sedative and febrifuge powers of Tartar Emetic, - - - - -	437	Gold, Preparations of, their Medical Virtues, - - - - -	149
Burder on Syphiloid Diseases, -	555	Graduates, List of at Philadelphia, in April, 1819, - - - - -	300
Corrosive Sublimate, best Preservative for Anatomical Preparations, - - - - -	150		

INDEX.

617

	PAGE		PAGE
Graduates, List of at Baltimore, in		Premium offered by the Philadel-	
April, 1819, - - - -	308	phia Medical Society, - -	284
_____ at New York, do.	304	Plague, Remedy for, - -	293
Indigo, Deoxidation of - -	293	Parry's Elements of Pathology,	
		Review, - - - -	583
Hydrocephalus, Successfully treat-		Salt, common, Medical and Die-	
ed by an Operation, - -	446	tetic Properties of, - -	267
Kinglake on Febrile Origin, -	263	Saffron, Preventative of sea sick-	
Membrane of the Eye, - -	149	ness, - - - -	272
Marshal on the Medical Proper-		Strontian Sulphate, discovered in	
ties of Common Salt, - -	267	the state of New York, - -	151
Meteorological Observations, -	295	Syphiloid Diseases, a paper on, by	
Maunoir, Professor, J. P. on the		Dr. Burder, - - - -	555
Actual Caution, - - - -	449	Tar, Use in Pulmonary Consump-	
Miscellaneous Articles, - -	609	tion, - - - -	149
Nicholi, Dr. on the Medical Use		Turpentine, its use, - - - -	277
of Turpentine, - - - -	277	Thompson on Varioloid Diseases,	239
Oxidizement of Iron, Remarks on,	150	Tartar Emetic, sedative and febrile	
Paracentesis of the Thorax, suc-		fuge powers of, - - - -	437
cessful, - - - -	275	Varioloid Diseases, Observations	
Prize Questions, - - - -	285	on, - - - -	239
		Vose's case of Hydrocephalus	
		cured by an operation, - -	446